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WILLIAM JOHN COOPER, Commissioner

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SECONDARY EDUCATION
IN NORWAY

By

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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
OFFICE OF EDUCATION,
Washington, D. C., September 23, 1930.

SIR: Accounts of education in other countries are of value to educators in the United States, and particularly if those accounts are largely statements of facts so arranged that they may be used in making fair comparisons between different school systems. The author of this study, an educator in the United States who writes and speaks the Norwegian language fluently, spent 18 months in 1924 and 1925 in Norway studying the schools there. In the course of his work unusual opportunities were given him in the way of aid from, and guidance by, the Norwegian National Ministry of Church and Education and other educational authorities. Immediately following his stay in Norway, he spent six months visiting Italy, France, Switzerland, Denmark, and Sweden to add to his knowledge of education in European countries.

As a result of his studies and observations he prepared this account of secondary education in Norway. I consider it to be valuable and recommend its publication as a bulletin of the Office of Education.

Respectfully submitted.

WM. JOHN COOPER,
Commissioner.

The SECRETARY OF THE INTERIOR.

INTRODUCTION

The main purposes of this study are (a) to assemble and report the facts about secondary education in Norway, and (b) to interpret to some extent the educational philosophy of that country. A minor purpose is to furnish the data that will help to place properly in the schools of the United States any young people from Norway who may come here to study.

The Norwegian system of education is the national scheme of human training worked out in a little more than a century of independence by a homogeneous people numbering about 2,800,000 living in a rigorous climate and in an area so mountainous and broken that not more than 4 per cent of the land is under cultivation. Agriculture, industry, commerce, fishing, forestry, and mining—pursuits that develop in the folk that follow them, independence, initiative, courage, and perseverance—are the chief occupations. They develop a wanderlust also and Norway has given freely of her human wealth to other countries.

In these circumstances the Norwegians have erected a political, social, and educational structure for a democratic people and have woven into it a culture that is in many ways singularly distinctive, and that is among the finest cultures of the world. In that culture the scheme of secondary education plays an important part.

SECONDARY EDUCATION IN NORWAY

Chapter I

General Characteristics of the Norwegian School System

ORGANIZATION BY LEVELS AND KINDS OF INSTRUCTION

Education in Norway is organized in general on a plan of a 7-year primary school (folkeskole), which the child enters at the age of 7, followed by a 3-year (middelskole), and this in turn followed by a 3-year gymnasium. At the close of the middelskole course the pupils undergo a middle-school examination (middelskole-eksamen), and the successful ones are granted a certificate which admits them to the gymnasium. The gymnasium course is closed by a maturity examination (examen artium); the certificate of having passed it admits the holder to an institution of university rank. The middelskole and the gymnasium and schools giving instruction on equivalent levels are in Norway the institutions of secondary education. The 13 years of primary and secondary school training are completed normally by students 20 years of age. Besides these schools of general or academic training, the educational system includes schools of many other types most of which have little connection with each other. Following is a condensed analytical statement of the organization:

I. *Primary* (folkeskoler). Ages 7-14.

1. Rural.
2. Urban.
3. All types of schools for abnormals.

II. *Secondary* (höiere skoler), based on primary school or additional preparation

1. Academic (leading to higher education).

a. Middle schools (middelskoler). Normal ages 14-17.

- (1) State.
- (2) Communal.
- (3) Private.

b. Gymnasiums. Normal ages 17-20; middle-school training prerequisite.

- (1) State.
- (2) Communal.
- (3) Private.

c. Rural gymnasiums. Four-year course; students older than 18; special requirements for admission.

II. *Secondary* (höiere skoler), based on primary school or additional preparation—Continued.

2. Commercial schools.

a. Commercial gymnasium. One to three year course; admission requirement same as for the academic gymnasium; have also special courses for advanced students.

b. Elementary commercial schools.

3. Normal schools.

4. State training schools for teachers of special subjects.

5. Military and naval schools.

a. Noncommissioned officers schools.

b. Naval schools.

c. Air-navigation schools.

6. Navigation schools for ship officers and seamen.

7. Cultural or inspirational schools.

a. Folk high schools.

b. Fylke schools.

c. Young people's schools.

8. Schools of agriculture.

a. Forestry schools.

b. Schools for gardening and horticulture.

9. Social service schools.

a. Schools for nurses.

b. Schools for social workers.

10. Telegraphy schools.

11. Industrial art schools.

12. Schools of industry.

13. Schools of domestic science and art.

14. Prevocation schools.

a. Continuation schools.

b. Evening schools of various kinds.

c. Technical evening schools.

15. Vocational schools.

a. Trade schools.

b. Technical intermediate schools.

c. Schools of mechanics.

d. Drawing schools.

16. Mining schools.

17. Music and art schools.

18. State school for the training of policemen.

III. *Higher education.*

1. University of Norway.

2. Polytechnic Institute.

3. College of Agriculture.

4. College of Dentistry.

5. Military Academy.

6. Military Graduate School.

THE LANGUAGE QUESTION

The educational system is bilingual. Norway has two official languages, Riksmål and Landsmaal. They are very similar but have different origins and derive their main factors from different group sources. When Norway became an independent country in 1814 after

a union with Denmark of more than four centuries, Danish was the language of all the cultured people, and of the school, the church, and the press. But a majority of the population, the peasantry, still spoke the Norwegian language that for want of a literary form had broken up into a multiplicity of dialects nearly all of which had their roots in the *Norröna* speech still used in Iceland. Through the work of Ivar Aasen (1813-1896) and other poets and writers a "common denominator" of these dialects was found and given status as a literary language, *Landsmaal* (country speech), as distinguished from *Riksmaal* (Government or official speech) as the Dano-Norwegian had come to be called.

The advocates of *Landsmaal* early demanded its introduction into the schools, and laws were passed making its use optional with the school districts. The city *folkeskoler*¹ chose *Riksmaal* but many of the rural *folkeskoler* adopted *Landsmaal* as the language of instruction. The laws provided further that each child should be taught in the language he understood the better and the teachers should be prepared to use both. The program of the normal schools was reorganized; some of them became entirely *Landsmaal* institutions, others were made bilingual.

In the *middelskoler* and gymnasiums *Landsmaal* was first optional, then required as part of the courses in the mother tongue. *Landsmaal* gymnasiums were established by the State in smaller towns and rural districts and in them *Landsmaal* was the language vehicle in all courses. The law now requires that all pupils in the *middelskoler* and gymnasiums pass an examination in both language forms. The requirement is much opposed in the cities where *Landsmaal* is like a foreign tongue to most of the pupils. But a rapid evolution of the two languages is now going on, similar to the amalgamation of the Anglo-Saxon and Norman-French languages that took place in England. There will be, no doubt, an amalgamation of the Norwegian dual form of speech in the no distant future. The coming language will be neither *Riksmaal* nor *Landsmaal*, but a combination of the two with elements of the latter predominating because it is nearer the cultural tradition of a majority of the people.

The educational value of this interesting language controversy is a much debated question. An American student in Norway can not help noticing the great influence it has had in stimulating popular education, especially in the rural districts. While the rivalry between the proponents of the two forms has caused much strife and political factions have been greatly agitated by it, yet the agitation has roused educational interest among folk of all classes, and has been the means of recovering much of the lost or slumbering cultural inheritance of the

¹ *Skoler* is the plural of *skole*.

people. During the long period of the union with Denmark the Norwegians almost forgot their great national past with their golden age of the Sagas, the Haralds, the Olavs, the Haakons, and others of their illustrious leaders, together with their Norse tongue. The Landsmaal is the vehicle of stimulation that is calling attention to their traditions and establishing their faith in their own national culture and independence.

EDUCATION BY PRIVATE AGENCIES

The National Government of Norway supports private educational enterprises in a way entirely foreign to theory and practice in the United States, but not unsound from a pedagogic point of view. An educator with vision may have a better opportunity to develop his philosophy of education if he can work independently.

ENROLLMENTS ON THE DIFFERENT LEVELS OF INSTRUCTION

Among persons of folkeskole age or older, inability to read and write is almost nil in Norway. By the census of 1920 the number of children between 7 and 14 years of age (the compulsory attendance ages) was 404,594, and 408,708 children were enrolled in the folkeskoler and institutions of similar grade. The difference is due to the fact that some of the children started to attend school before the compulsory attendance age. No definite figure is given as to how many completed the folkeskole or its equivalent that year, but a close estimate is 58,387, or one-seventh the total number of children in those schools. All the accredited middelskoler in April of 1921 had 22,815 pupils, or about 5½ per cent of the number enrolled in the folkeskoler the previous year. The number in each class of the middelskoler was estimated at 6,084 pupils. This is approximately the number that enrolled the year before (1920) from the total output of 58,387 from the folkeskoler. These data show that at least 10.4 per cent of the children that finished the folkeskole courses in 1920 enrolled in the accredited middelskoler.

The number of pupils enrolled for the final middelskole examination in 1921 was 4,877, about 80 per cent of the number that entered the middelskoler the year before. Of the 4,877 pupils, 121 withdrew before and during the examination, and of the remainder,¹ 4,424 passed. The per cent of failure was almost 7. At the same time 798 *privatists*² (candidates from nonaccredited schools) attempted the examination and 656 of them passed; the per cent of failure was 17.8. The total number that passed the middelskole examination in 1921 was 5,080 (2,795 boys and 2,285 girls).

¹ Of the remainder, 4,756 pupils, there were 2,524 boys and 2,232 girls.
² 334 boys and 274 girls.

The middelskoler in 1922 graduated 5,552 pupils. That year it is estimated 2,237,⁴ or about 40 per cent of the middelskole graduates entered the gymnasiums. The students in the gymnasiums in 1924-25 were distributed among the different lines as follows:

Lines	Number of students	Per cent of pupils
Real	2,633	41.5
Language-history	1,510	24
Latin	2,060	32.5
Latin with Greek	132	2
Total	6,335	100.0

The students were 4,131 boys and 2,204 girls. To this number must be added 250 (200 boys and 50 girls) from nonaccredited schools that also prepare candidates for the final examination (examen artium) of the gymnasium, making a total of 6,585 (4,331 boys, 2,254 girls).

In 1925 the graduates of the gymnasiums were distributed among the different lines as follows:

Lines	Number of graduates	Per cent of graduates
Real	686	41.9
Language-history	446	27.2
Latin	480	29.3
Latin with Greek	26	1.6
Total	1,638	100.0

The number of graduates in 1925 was 73.2 per cent of the number of students that entered the gymnasiums in 1922.

Practically all of the students who complete the examen artium matriculate at the university, but many of them do not attend. They matriculate (register) and receive the Akademiske Borgerbrev (an honorary academic certificate which initiates the student into the society of academicians). No statistics are available as to how many actually become freshman students at the university, but from the tables below it may be estimated that 40 per cent of the students that complete the examen artium study in the university. The percentage of students attending other institutions of higher learning, which require the examen artium for admission, was about 18 per cent of the total number graduating from the gymnasiums in 1924,⁵ so that in the aggregate, about 58 per cent of the gymnasium graduates

⁴ This estimate represents one-third the total number (6,585) of students in all gymnasiums in 1924-25. The estimate is low for there were probably more students in the freshman class than there were in the senior. The writer was told by all the rektors he consulted that over 80 per cent of the students that enter the gymnasium finish the course.

⁵ Statistisk Aarbok for Kongeriket Norge. 46de Aargang, 1926, og 1927, Oslo, 1927.

actually attend higher institutions of learning. About 14 per cent enter commercial and normal schools. The remainder, or 28 per cent, are mostly young women who either marry or enter special types of schools or follow business pursuits of various kinds. The following tables show for the years 1915 to 1924, inclusive, the number of students that completed the examen artium and those studying in the different colleges of the university:

Number of students that completed the examen artium

Year	Students	Year	Students
1915.....	819	1920.....	1,034
1916.....	929	1921.....	1,246
1917.....	965	1922.....	1,335
1918.....	996	1923.....	1,396
1919.....	952	1924.....	1,820

Number of students in the different colleges of the university

Year	Theology	Law	Medicine	Liberal arts	Real	Political economy	Other students	Total
1915.....	169	362	434	300	193	49	43	1,550
1916.....	156	322	460	314	192	33	23	1,500
1917.....	145	320	486	303	191	45	60	1,550
1918.....	101	320	488	256	142	120	181	1,608
1919.....	105	358	533	245	129	149	202	1,721
1920.....	85	408	630	273	136	162	137	1,831
1921.....	110	459	636	337	156	144	173	2,015
1922.....	115	596	709	407	222	121	217	2,387
1923.....	127	615	698	510	257	98	211	2,516
1924.....	159	785	793	627	307	115	225	3,011

Roughly, then, during the years from about 1920 to 1925 the statistical succession in the different levels of instruction through this series of schools leading to the university shows 408,700 students in the 7-year folkeskoler with 58,400 graduating yearly of which 6,800 were entering the 3 and 4 year middelskoler. The middelskoler were enrolling 22,800 students and graduating 5,500 yearly, of which 2,250 were entering the gymnasiums. The gymnasiums were enrolling 6,600 students and graduating 1,650 annually, and of these about 58 per cent went on to attend the university and other institutions of higher learning. It must be remembered that these data do not include the pupils in the many schools of special kind, that play so large a part in education in Norway.

More than three times as many graduates of the folkeskole go each year into other types of secondary education than go into the academic line (the middelskole). No complete statistics on this point are obtainable, because there are many private schools and teachers who do not report their attendance. But by computing the new registrations for one year of the schools and courses whose attendance reports are available, I find that the total number of new registrations

amounted to about 27,500 students, or about 47 per cent of the pupils completing the public schools in 1920. (This number is exclusive of students registering in the middelskoler, which alone constituted more than 10 per cent of the total output of the folkeskoler for the same year.) Even from the schools reporting attendance it proved impossible to get the exact number of pupils that came directly from the completed folkeskole each year, as some of the pupils had come from the middelskoler, possibly a few also from the gymnasiums, and some had completed the folkeskole a few years earlier. But a conservative estimate of the total number of Norwegian children and young people entering some type of secondary school each year, including middelskole, would be at least 53 per cent of the total number completing folkeskole each year.

SCHOOL FINANCE⁶

In 1924-25 Norway had a total State budget of \$166,970,804.⁷ The total expenditure for all public education, primary, secondary, and higher, was \$31,889,232. This is 17 per cent of the entire State budget. Of this total, \$23,696,593 were for primary education alone, of which the State contributed \$9,789,840. There were 395,553 children⁸ enrolled in the primary schools for that year. Thus the cost per pupil would be close to \$60.⁹

Secondary education drew \$3,705,943 of the total amount spent, including the cost of State examinations. This represents a cost of \$164.30 per pupil enrolled in all public middle schools and gymnasiums for the same year. In the United States the estimated cost of secondary education for the year 1921-22 was \$145.25 per pupil.¹⁰ Of the \$3,705,943 the State paid \$1,197,834, or about 35 per cent. University or higher education costs more than twice as much as for secondary education. The money spent for higher education was \$1,404,338. The number of students receiving training was about 4,000. The cost per student would thus be about \$350. The State contributed nearly 80 per cent of the cost of higher education.

It will be seen from the foregoing that the State of Norway is a heavy investor in education, in some instances paying more than 50 per cent of the total cost. The balance is derived from various sources. In primary education the local communities, together with the fylke

⁶ The financial statistics giving dollars in terms of Norwegian kroner is calculating the krone at par (3.75). The krone in 1924-25 was constantly fluctuating in foreign exchange and much below par in exchange for American dollars. Thus the amounts in dollars given above are perhaps 20 to 25 per cent too high according to the rate of exchange at that time. The krone is now at par (1930).

⁷ Norway Yearbook, pp. 107-109, 1924.

⁸ This does not include children in private schools, nor those of the abnormal or corrective type, nor children specially tutored, aggregating about 25,000.

⁹ In the United States the cost of primary education per child for the year 1921-22 was estimated at \$37.12. Statistical Survey of Education, U. S. Bureau of Education Bulletin, 1924, No. 35.

¹⁰ Ibid., p. 2.

or county, must make up the balance. This they do by direct taxation and by special levy on industries and corporations. The fylke contributes a percentage of the fylke taxes and other fylke sources of revenue which oftentimes is a considerable amount.

The secondary schools are financed somewhat differently, especially that type spoken of as State schools (Offentlige skoler). The State pays the salary of teachers and the initial cost of buildings, grounds, equipments, etc. But each school has also resources of its own. For example, the Oslo Katedralskole had in 1924-25 the following:

Resources:	Kroner
Interest, etc., from legacies and bequests.....	53, 624
Tuition.....	69, 396
Contribution from city funds.....	211, 296
State appropriation.....	68, 070
Total.....	402, 386
Disbursements:	
Salaries.....	240, 731
Teachers' pensions and stipends.....	2, 904
Other expenses.....	158, 751
Total.....	" 402, 386

The Oslo Katedralskole had 27 regular teachers, 325 students in the gymnasium, and 178 in the middelskole.

Hammersborg Skole of Oslo is a typical communal secondary school. It had for the same year 351 students in the middelskole, but only 61 in the gymnasium; all in the Latin line. The school had 22 regular teachers and two special teachers (engaged by the hour). The financial status was as follows:

	Kroner
Interest, etc., from legacies and bequests.....	2, 200
Tuition.....	10, 559
From city funds.....	180, 131
State contribution.....	84, 349
Total.....	277, 239
Disbursements:	
Salaries.....	236, 350
Pensions and stipends.....	1, 680
Other expenses.....	39, 209
Total.....	" 277, 239

The private schools make up their budgets in a similar way. Not-odden gymnasium may be taken as an example of the schools of this type. It had in 1924-25 three teachers and only 40 students, 10 of which were girls. Its financial report was:

" The financial status of the 17 State schools in the country is stated in Table 1, pp. 9-10.

" For total report on all communal schools, 98 in all, cf. Table 1, pp. 9-10.

Receipts:

Contributions by the State.....	Kroner 3,000
Tuition.....	18,790
Other income.....	12,559
Total.....	34,349

Disbursements:

Salaries.....	32,324
Other expenses.....	2,025
Total.....	34,349

The following statistics regarding the number of schools, enrollment, graduates, teaching staff, resources and expenditures are given for the year 1924-25 for the middelskoler and the gymnasiums.

TABLE 1 (A).—Total of all accredited State, communal, and private middle schools and gymnasiums for the school year 1924-25

Schools	Number of classes ¹			Number of pupils, April, 1925										Number of pupils holding free places, part or full ²	Pupils holding school stipends (from school funds for such) ³
				Gymnasiums						Middle schools					
	In the gymna- siums	In the middle schools	In the preparatory classes ¹	Real line	Language-history line	Latin line	Latin line with Greek	Total in gymna- siums	Of which girls	In middle schools	Of which girls	In preparatory classes ¹	Of which girls		
State schools.....	127	113	---	1, 196	724	908	118	2, 946	969	2, 857	1, 275	---	---	1, 176	200
Communal schools.....	159	569	13	1, 230	782	936	---	2, 948	1, 166	13, 739	6, 309	423	267	7, 751	187
Private schools.....	24	45	38	207	4	216	14	441	69	964	567	884	557	205	55
Total.....	310	727	51	2, 633	1, 510	2, 060	132	6, 335	2, 204	17, 560	8, 151	1, 307	824	9, 132	541

¹ 25 pupils is considered a normal class.

² A short-cut training for middle school to avoid attending public school.

³ Instead of making tuition all free, a system of "free places." Any child with interest and talent may receive a "free place."

⁴ A scholarship plan.

TABLE 1 (B).—Total of all accredited State, communal, and private middle schools and gymnasiums for the school year 1924-25

Schools	Graduates from gymnasiums, 1925						Graduates from middle schools, 1925				Number of middle- school pupils, third year, carry- ing one subject less than normal requirement			
	Real line	Language-history line	Latin line	Latin with Greek	Total	Of which girls	Enrolled pupils ¹	Privatists ²	Total	Of which girls	Enrolled pupils	Privatists	Total	Of which girls
State schools.....	307	215	219	21	762	240	576	210	786	342	26	26	52	26
Communal schools.....	219	231	212	—	762	294	2,838	251	3,119	1,374	147	34	171	70
Private schools.....	60	—	49	5	114	18	140	66	206	86	46	5	51	30
Total.....	586	446	480	26	1,638	552	3,554	527	4,111	1,802	229	65	294	126

¹ Regularly enrolled and thus not "privatists."

² A "privatist" is one who has had his training in an unaccredited school, or who has prepared for his examination by self-study or private instruction.

TABLE 1 (C).—*Total of all accredited State, communal, and private middle schools and gymnasiums for the school year 1924-25*

Schools	Number of permanent male teachers	Number of permanent women teachers	Number of special male teachers ¹	Number of special women teachers ¹	Resources of schools, 1924-25				
					Interests from endowments, etc. (kr.)	Tuition (kr.)	Local taxes and other communal contributions (kr.)	State contribution (kr.)	Total (kr.)
State schools.....	256	55	54	17	232,357	726,961	1,017,000	1,515,540	3,491,858
Communal schools.....	608	330	156	113	158,983	1,217,827	6,519,236	2,093,986	9,990,032
Private schools.....	38	71	44	25					
Total.....	902	456	254	155	391,340	1,944,788	7,536,236	3,609,526	13,481,890

¹ These are usually engaged by the hour or lessonTABLE 1 (D).—*Total of all accredited State, communal, and private middle schools, and gymnasiums for the school year 1924-25*

Schools	Expenses for the year 1924-25			
	Salaries (kroner)	Pensions and stipends (kroner)	Other expenses (kroner)	* Total (kroner)
State schools.....	2,566,403	59,061	869,337	3,494,801
Communal schools.....	7,814,672	42,559	2,122,584	9,979,815
Private schools.....				
Total.....	10,381,075	101,620	2,991,921	13,474,616

Total number of State schools.....	17
Total number of communal schools.....	98
Total number of private schools.....	10

SCHOOL BUILDINGS AND EQUIPMENT

Norway tries to maintain high standards in regard to school buildings and equipment but this has not always been possible because of economic conditions. Many of the old school buildings do not satisfy modern ideas of hygiene and convenience. Those erected more recently are of modern standard type.

Some of the primary-school buildings of Oslo, such as Majorstuens and Ihla, would be a credit to any American city. They have all the modern conveniences, including lunch room, physical training rooms, showers and baths. Among the most important of the secondary-school buildings may be mentioned the fine municipal school buildings of Oslo: Hegdehaugen, Frogner, V stheim, and Fagerborg schools. They are also of the largest in the country, although neither one of them is large in comparison with American city high schools. Fagerborg was the largest secondary school in Norway in 1925. It had 772 students enrolled, 147 in the gymnasium and 625 in the middelskole. Frogner was the next largest with 235 students in the gymnasium and 483 in the middelskole. Hegdehaugen and Vahl

had 432 and 355 pupils, respectively. They have, as a rule, modern equipment, at least according to European standards.

The new buildings are scientifically constructed also in point of light, heat, and acoustics of classrooms. The Norwegian school buildings, primary and secondary, have no auditoriums or large assembly rooms. School activities there find no need for large assembly halls. But there is always a teachers' room in which faculty meetings are held and in which luncheons are served about 11 o'clock every morning. During that 20-minute period and other shorter recess periods all the pupils are out in the school yard playing and lunching.

A characteristic feature of the Norwegian secondary-school building is that the pupils enter from the school yard or court, which is always strongly inclosed with a high fence. This court, which may vary in size, is for the pupils during the recess periods, and has a gate entrance which is closed during the school day. This arrangement is calculated both for safety and control. The pupils do not go out on the street from the time they enter in the morning until they leave in the afternoon. Seldom are their play and sports in view of the public.¹³

Individual laboratories in physics and chemistry are purposely not used. The schools are usually well equipped with apparatus for experimentation in physics and other sciences, including chemistry, in the gymnasiums. But the experiments are performed in the classroom by the teacher assisted by students. It is held that individual experimentation in laboratories is largely a waste of time and that far more satisfactory results may be obtained by the classroom method of experimentation. This is probably truer of physics than of chemistry, but the latter science is not in the middelskole curriculum and is given but one year in that of the gymnasium, so that the real need in Norway for individual experimental work in chemistry does not come before the students enter the higher institutions.

No statistics are available as to cost of construction of school buildings. But from material which the writer was able to gather by interviewing rektors and other professional school men, it is safe to say that the cost of school buildings in Norway is perhaps not much less than for the corresponding size of buildings in America, kind and quality of material, as well as of workmanship, compared.

¹³ Large school grounds so common in America are seldom seen in Europe.

Chapter II

Administration of Secondary Education

NATIONAL AND LOCAL GOVERNMENT

Norway is a constitutional and hereditary monarchy. The legislative power is vested in the Storting of 150 members elected every three years by direct vote of all Norwegian subjects 23 years of age and over. Executive authority is exercised by a cabinet called the Statsraad (literally Council of State) consisting of the Prime Minister (Statsminister) and at least seven other ministers (Statsraader). The ministers may attend the sessions of the Storting and take part in the discussions but they may not vote.

The country has 20 main administrative divisions: The cities of Oslo and Bergen, and 18 fylker (counties) each presided over by a fylkesmann (governor). Each fylke, with the exceptions of Oslo and Bergen, is divided into convenient but irregular herreder (township). The herred has a herredstyre (township board) of from 12 to 48 members elected triennially. It selects its own chairman and he, with the chairmen of the other herreder in the fylke, form the fylkesting (county diet) which meets annually to settle the budget of the fylke. The herred has a skolestyre (school board) and is divided into local school districts. A city-fylke (Oslo and Bergen) has no herred or school district divisions; the skolestyre is similar to a city board of education in the United States.

THE ADMINISTRATIVE SUCCESSION

Briefly stated, the four steps in the administration and professional direction of the secondary schools are: (1) The Department of Church and Education (Kirke og Undervisningsdepartementet); (2) the Educational Council (Undervisningsraad); (3) the local governing board for each school (Forstanderskap); and (4) the Faculty Council consisting of the rector and teachers of each school (Skoleraadet). The scheme may be diagrammed as follows:

I

OVERSTYRET

(Head Office)

The King

Minister of Church and Education

Expeditionschef

(Chief Executive)

Four Bureau Chiefs

First, Second, Third, and Fourth Skolekontor
(First, Second, Third, and Fourth School Office)

II

UNDERVISNINGSRAADET

(State Council of Education. Professional. Seven members)

III

FORTSTANDERSKAPET

(Board of Directors. Local for each school. Five members)

IV

SKOLERAADET

(Faculty Council. Composed of the rector and regular teachers)

Included in the head office (Overstyret) are the King, the minister of the Department of Church and Education, his two executive chiefs (Expeditionschefer), one each for church affairs and for education, and the four bureaus (Skolekontorer) each with its chief. The minister is a political officer and may be a churchman, a schoolman, or neither. He is appointed by the Prime Minister with the consent of the King, and he and the entire cabinet of ministers must be in agreement with the Storting.

The position of expeditionsschef is professional, not partisan political. The incumbent attends to the business transactions that come within the scope of his authority, formulates orders from the ministry, and compiles the reports and documents and causes them to be published. Under the expeditionsschef for education are the four bureaus known by their respective numbers as first, second, third, and fourth and each is presided over by a chief who is also a professional official independent of party politics. The secondary, technical, and trade schools—those with which we have to deal—are under the second bureau.

The two main kinds of secondary schools, the middelskoler and the gymnasiums, are classed as higher schools (høiere skoler), a term that does not include any institutions of university rank. The middelskole and the gymnasium have the same form of administration.

and are frequently conducted in the same school home or building, but each is a distinct unit for a definite level of instruction.

The real educational guidance for the secondary schools is provided by the State Council of Education (Undervisningsraad) of seven members appointed for a term of five years by the King and confirmed by the ministry. The council acts as a professional unit for the nation. Its members are usually active leaders in school affairs, men of pedagogical and professional experience and of active insight in matters of secondary and higher education. The council prepares a common curriculum for all secondary schools, sets the examination questions, and supervises the final examinations in both middelskoler and gymnasiums. It also exercises general supervision over the selection of textbooks and reviews and recommends new texts.

Every secondary school has a local board of directors (forstanderskap) of five members consisting of the rector of the school, a member appointed and authorized by the ministry for four years, and three elected by the communal board or council. The forstanderskap meets at least once a quarter, exercises general supervision over the school, and has the following listed functions: (1) By the advice of the rector, to determine lines of work where there is provision for choice; (2) in case of vacancy in the rectorship to make nomination to the Overstyre; (3) to report the rector's nominations of candidates to fill vacancies; (4) to manage school property, buildings, and income; (5) on recommendation of the rector, to report estimates of income and expenses for every budget term; (6) to appoint a school treasurer and to supervise all matters of business; (7) to audit all business transactions and to exercise control over the treasurer of the school; and (8) to supervise buildings and other property.

Religious instruction in the school is supervised by the bishop or a clergyman appointed by the bishop.

By paragraph 41 of the education code every school must have a faculty council (Skoleraad) composed of the rector as chairman and all the permanent teachers. The rector may call in temporary teachers to take part in the discussion but they may not vote. The council meets, as a rule, once a month or oftener and determines the following types of cases: (1) Entrance qualifications of pupils; (2) promotions; (3) estimates of the progress, industry, and conduct of the pupils; and (4) dismissals according to provision of law. Within the provisions of the law it also makes arrangements regarding the length of school time and vacations, and the discipline and order of the school.

The rector must secure the expression of the faculty council before he reports on matters concerning: (1) Adoption of new texts and changes in the teaching program; (2) distribution of subjects among

teachers; (3) distribution of stipends and free places to pupils;¹ (4) determining lines of study, the alternating of subjects and the number of classes to be carried; and (5) making estimates of the school income and expenses for each budget term. Reports concerning (1) and (2) are sent to the department; those relating to (3), (4), and (5) are sent to the local governing board.

KINDS OF ADMINISTRATION AND SUPPORT

Classified by kinds of administration and support, Norway has two types of public secondary schools: State² and communal. They have about the same curricula and are much alike in administration. The State schools, which include the four cathedral schools of Oslo, Bergen, Trondhjem and Kristiansand (the oldest secondary schools in Norway), have each a local *forstanderskap* (as described on p. 14); the communal schools were started and fostered by the community and have a local board of education of the communal type, which may exercise control over more than one school—as in the larger cities.

A striking feature of this Norwegian scheme of secondary school administration is that it has no place for a superintendent of education, either city, rural, or communal. The powers and duties that are given over to a city or local superintendent in the United States are in Norway largely vested in the schools themselves through their rectors and the council of teachers, who follow statutes in which provision is made in detail for nearly every situation.

THE SYSTEM OF STATE EXAMINATIONS

State examinations are an outstanding feature of Norwegian secondary education. They are conducted by the State with but slight participation by the local authorities. The schools furnish the products (trained young people); the State authority puts its valuation on that product by means of examinations. By that method all schools must be measured, and when the results of the examinations are known no objections are raised against anyone. No position or social standing is risked or sacrificed by any of the teachers; all feel that the system reaches a high standard of attainment and scholarship that no one would be willing to lower.

The examinations are of two grades: "Middelskole eksamen" and "examenartium." They are held at the same time in all the "eksamensberettigede" (accredited) schools in the country. Pupils from non-accredited public or private schools are called "privatister" and may be examined in any of the accredited schools by application and

¹ "Free places" is a feature of promotion. The secondary schools as a rule charge a small tuition for those who do not bring "free place" certificates. A great many worthy pupils may now receive free places.

² Throughout this study the word "State" is used in the sense of nation or national.

certification of their principals and by submitting themselves to certain additional tests.

The administrative head of the examination system is the Undervisningsraad.³ This board prescribes and administers all the State examinations, which are both written and oral. It appoints an examining committee (or local board) for each accredited school, consisting of active teachers (especially qualified) from outside schools, whose business it is to superintend the written examinations. Care is taken that the pupils are not personally acquainted with their examiners. The rules prescribe the conditions under which the examinations must be taken, such as the distance between pupils for the written work, kind of writing material, etc. Anyone disregarding any of the rules is promptly dismissed from further participation for that year. The question slips come in sealed packages for each subject with the instructions printed on the package. Each pupil is given a number that he places on his work. There must be no names or any other means of identification of the work. The names with corresponding numbers are placed in a sealed envelope and forwarded by the rektor to the district foreman of the examination board with all the papers. There the papers are read by two specialists (appointed each year by the council from the active teachers) who must agree on the value of each paper before its identity is disclosed. Should they not agree, a third specialist is called to assist in the decision. A district foreman is appointed in each examination district to supervise the reading of the papers.

There are two general groups of examinations called boklige fag (book subjects) and ferdigheter (practical subjects). The latter are penmanship, drawing, manual art (for boys), domestic science (for girls), and physical training.⁴ At the middelskole examinations there are certain exemptions as to omitting some of the oral and practical tests, but all such exemptions are arranged between the individual school and the district foreman who receives authority from the council to decide such questions. But no exemptions may be published at the school earlier than two days before the date of the examinations.

The following grades are given for written work:

Saerdeles tilfredsstillende (superior).....	in figures..	4
Meget tilfredsstillende (very satisfactory).....	do.....	3
Tilfredsstillende (satisfactory).....	do.....	2
Nogenlunde tilfredsstillende (quite satisfactory).....	do.....	1
Maatelig (passing).....	do.....	-2
Ikke tilfredsstillende (not satisfactory).....	do.....	-3

For the practical subjects and for oral examinations the grades are given as follows: Meget tilfredsstillende, tilfredsstillende, nogenlunde tilfredsstillende, ikke tilfredsstillende.

³ The State board or council as described above.

⁴ The girls do not take examinations in gymnastics.

Before March 1, the rektor of each accredited school must send in his list of eligible candidates for examen artium to the State council with complete data of their training and preparation, certifying that they have passed the annual school examinations in each subject, and that they are of good moral character. "Privatists," or any of the irregular students wishing to try the examinations, must have conferred with a regular rektor before February 15. He will then ascertain as to the eligibility of such privatist who, in any case, must submit to certain special tests not exacted from the regulars. The candidate's eighteenth birthday must not be later than December 31 of the year in which his examination occurs.⁵ The examination fee is 40 kroner (normally about \$10) for examen artium. This fee may be omitted in certain cases. The reading of the papers must be done forthwith and reported to the council, who at once must communicate the result for each candidate to the rektor. In addition, the censors must forward a special report to the council in which they make a personal statement regarding each paper they have censored. These special comments are recorded for reference.⁶

The class instructor must report to the rektor his personal estimate of all his pupils in subjects for which oral examination is required, and these estimates must be over the signature of the teacher. The oral examinations are usually conducted by the class instructor, but always with a censor appointed by the council. This censor (who is a specialist in the subject) determines the value of the pupil's oral ability, and may ask additional questions of him. Before his grades are made final the censor is made acquainted with the mark or rating that the instructor has made, for the sake of comparison, but in all cases of disagreement the censor's estimate stands. Those who are prevented from taking the examination by reason of sickness or other legal excuse, may take them in the fall of the same year, under special regulation of the council.

⁵ But very few candidates need this restriction, since the normal age for completing the gymnasium is 20 years.

⁶ It should be borne in mind that these young people, upon their successful completion of examen artium, now for the first time become "students," as that will be their title and social rank during their attendance at the university, the Polytechnic Institute, or the College of Agriculture. Upon the successful completion of the university training they become "candidates," and they are so designated until they receive official appointment. These State appointments, including those for secondary-school teachers, are largely based on the candidate's educational record, both his examen artium and his professional examination, as the candidates are preferred according to their scholastic rating.

Chapter III

The Middle School

ITS GENERAL AIM

Norwegian academic education, as previously noted, covers a period of six years divided into three years each for the middelskole and the gymnasium. The aim and scope of the middelskole is set forth in the School Code of 1896, amended several times since: "The middelskole is a school for children which, together with the folkeskole, furnishes its pupils a complete popular education, adjusted to their age and receptibility." This is inferred to mean a training that is both physical and spiritual as well as intellectual.

THE MIDDLE SCHOOL COMPARED WITH THE HIGH SCHOOL

The middelskole has no exact prototype in the United States, though in many respects it resembles the 4-year high school. The admission requirement for both is the satisfactory completion of the elementary school; the ages (14 to 17) of the pupils are the same in the two for the first three years; and much of the content of the courses is similar.

The Norwegian child spends more time in school during his three years at the middelskole than the American child does at the 4-year high school. Norwegian schools are in session six days a week and this adds 40 days or two American school months to the school year made up of 5-day weeks. The middelskole pupil invariably has six school periods a day, or 36 recitations a week of 45 minutes each, which is from one to two subjects more than the average American high-school pupil carries. The Norwegian summer vacation is short, about six weeks. Christmas, Easter, Pentecost, and other special holidays add six weeks more of vacation, leaving a school year of 40 weeks. The children generally spend the short summer vacation in the country or at some mountain resort, sometimes in groups under the direction of a teacher or other qualified person who leads and chaperons his group in various sports and excursions, thereby supplementing book knowledge by practical experience and in close touch with nature.

The three years of the middelskole include a total of 4,320 recitations or school periods, and this divided by 25, which is about the average number of recitations per week for a high-school student in the United States, amounts to 173 school weeks or $4\frac{1}{2}$ school years of

40 weeks each in the United States. The following table gives the curriculum of the middelskole by subjects, years, number of recitations per week, totals for the three years, and comparisons with the time element in the United States; assuming the periods in the high school to be 45 minutes each:¹

Curriculum of middelskole by subjects and number of recitations per week compared with the number of recitations in high schools in the United States

Subject of instruction	Recitations per week			Total recitations in 3 years	In terms of 5-day weeks in the United States	In terms of 20-week semesters in the United States
	First year	Second year	Third year			
Religion.....	2	2	1	200	40	2.0
Norwegian.....	5	4	4	520	104	5.2
German.....	6	5	6	680	136	6.8
English.....	0	6	8	560	112	5.6
History.....	3	3	3	360	72	3.6
Geography.....	2	2	2	240	48	2.4
Natural sciences.....	3	2	4	360	72	3.6
Mathematics.....	5	5	5	600	120	6.0
Drawing.....	3	2	0	200	40	2.0
Penmanship.....	1	0	0	40	8	.4
Physical training.....	3	3	3	360	72	3.6
Domestic science and manual training.....	2	0	2	160	32	1.6
Singing.....	1	0	0	40	8	.4
Total.....	36	36	36	4,320	5,864 173	543.2 8.64

THE CURRICULUM

The middelskole courses are prescribed by law and are quite rigid, so that all pupils take the same subjects in the same order and for the same length of time. The reason for this, the school authorities say, is that the middelskole is essentially a children's school—an upper division, as it were, of the folkeskole—and should therefore be uniform for all and compulsory to the extent that children who do not attend the middelskole shall attend some type of continuation school for a term of at least two years. In the United States each subject of study is continued by daily recitations until completed and the examination is given by the teacher of the subject at the end of each year or semester. In the middelskole all subjects, with the exceptions shown in the table above, are carried throughout the entire 3-year period each with one to six or eight recitations a week according to the importance attached to the subject. This is really the traditional form of school program in nearly all the European systems. The form has much to commend it, because the child's understanding of a subject is far greater in the third than it is in the first year of the courses, and thus he can accomplish more proportionately during the second and third years than he can in the first; and further, the

¹ The averages used for the United States are based on Accredited Secondary Schools in the United States, by F. M. Phillips, U. S. Bureau of Education Bulletin, 1928, No. 26; and Secondary Schools of the Southern Association, by Joseph Roemer, U. S. Bureau of Education Bulletin, 1928, No. 16.

nature of some of the subjects is such that they should be begun as early as possible. A practical reason in the middelskole lies in the fact that the State examination is given in all the subjects at the end of the third year and the candidates must be prepared in all the subjects at that time.

THE SUBJECTS OF INSTRUCTION

Religion.—Religion is included in curriculum of the schools in Norway and in most other countries with a State religion. It is usually listed first on the program. The age of confirmation in the Norwegian Lutheran Church is normally 14, that is, at the close of the folkeskole and the child has completed his primary steps in religious training. The aim of the course in the middelskole is "to secure a definite knowledge of the most important content of Bible history, the principal events in church history, together with the Christian fundamentals (barnelaerdom) according to the evangelical Lutheran faith."² In addition to this, an effective moral training is attempted, calculated to give expression both in precept and example.

Mother tongue.—Pupils must attain to a knowledge of both Riksmaal and Landsmaal so that they are able to read with expression and interpret selections from both languages, and be able to treat the same in standard composition form. The law insists on correct vocal expression to train the ear and vocal organs in verbal form and style. Definite form of literary expressions is insisted on throughout the entire process of instruction in the mother tongue. The difference in teaching the mother tongue in Norway and in the United States is decided both as to content and method. The amount of material used in the Norwegian schools is much smaller but of high quality. It is much like the instruction in English given in the high schools and academies 25 to 30 years ago. Then classic English and American literature was practically the only material used for classroom reading and study. Very little cursory reading was required. The Norwegian content material draws deeply from history, tradition, and folklore and for that reason needs close interpretation and analysis in its treatment.

The technical work in grammar and composition is far more formal than it is in schools in the United States. The results show excellent training. Good language is insisted on in all school subjects. Correlation between the teaching of the mother tongue and foreign languages is definitely sought. Teachers of foreign language must have an intimate knowledge of the grammar text for the mother tongue, so that they will not confuse the foreign language pupils with unnecessary terminology. A brief history of literature is given in the third year.

German.—German is the foreign language taught first; it has one year more of study than any of the others. At the same time it sug-

² Lovén av 27 juli, 1896, quoted in Middelskolen.

gests both method and content for the other languages. There are good reasons for this. Linguistically, Norwegian has more in common with German than with English or French. Economically and commercially, Norway is perhaps more closely related to Germany than to any other large country. Added to these reasons is the close cultural relationship, especially in education and philosophy. The Norwegian system of education has its main root in the German system.

At the close of the middelskole the pupil must have acquired a good pronunciation of German; be able to read understandingly easy unfamiliar selections; have a good knowledge of the grammar and the main points in syntax; and be able to write a creditable composition which will indicate that he has a good understanding of the common vocabulary and can use it with proper grammatical construction. In lieu of an original composition he should be able to rewrite a German story in connected discourse after it has been read aloud once to the class. He should also be able to understand spoken German and to express himself orally with reasonable ease.³

The examinations are written and oral. Formal grammar and all the technical work, based on the regularly authorized texts, are reserved for the oral examination. For the written examination, an option is given between writing a composition based on a short printed story in the two Norwegian vernaculars placed before the candidates, or it may be retelling a story read to them twice slowly in German by one of the censors. The following German text is typical of the kind and grade used in the written examinations:

Wen jemand eine Reise tut, da kann er was erzählen.⁴

Ein junger Engländer war mit seinem Diener auf Reise gewesen und hatte auch Brasilien besucht. Als er wieder nach Hause gekommen war, sagte er zu seinem Diener: Johan, ich möchte mich nicht lächerlich machen, wie es so viele Reisende tun. Du weisst, dass sie oft gewaltig übertreiben und ganz unglaubliche Geschichten erzählen. Also, du stellst dich hinter meinen Stuhl und gibst mir einen leichten Stoss in den Rücken, wenn ich übertreibe.

Einige Tage nachher lud der junge Herr seine Freunde zu einer grossen Gesellschaft ein. Das Gespräch war lebhaft, und besonders der Wirt hatte viel von seinen Abenteuern in fremden Ländern zu berichten. So erzählte er, wie er in den Wäldern Brasiliens einen Affen gesehen habe, dessen Schwanz fünfzig Fuss lang gewesen sei. Als ihm aber Johan einen leichten Stoss versetzte, fügte er hinzu: Ich habe ja den Schwanz nicht messen können; aber er war gewiss nicht kürzer als vierzig Fuss. Wieder erhielt er von Johan einen Stoss und fuhr fort: Der Affe sass auf einem Baum, und sein Schwanz hing zur Erde hinunter. Dreissig Fuss lang muss er gewesen sein. Ich kann jedenfalls schwören, dass er nicht unter zwanzig Fuss gewesen ist. Als aber Johan unerbittlich blieb und mit dem Stossen nicht aufhören wolte, wandte er sich erbittert zu ihm und sagte: Johan, du bist ein Schafskopf! Glaubst du denn, dass der Affe überhaupt keinen Schwanz gehabt habe?

³ Cf. Middelskolen (Law), op. cit., pp. 66-67.

⁴ Used in 1920.

English.—The statutory provision for English is about the same as for German.⁵ Much stress is placed on correct pronunciation and on conversation.⁶ By reason of the greater simplicity of the English grammar than of the German, the direct method seems better adapted to the former language. This is used effectively, as the practical results seem to show. Following the pedagogical principle that two modern languages should not be started at the same time; the Norwegian middelskole beginning with German the first year, adds English as a regular subject the second year with a 6-hour recitation course. This is increased to eight hours a week for the third year, so that by the end of the course they have had 560 recitations in English, or 112 five-hour weeks as against 136 five-hour weeks of German. It is held by language teachers in Norway that with this difference between German and English, both as to number of recitations and content of courses, as well as linguistic differences, the students are really as far advanced in English as they are in German at the end of the middelskole term.

Both oral and written examinations are required. The following text was used in the written English examination, 1921. It was read twice slowly to the candidates, who were then asked to *retell it* (write it) from *memory* (not notes).

THE WATCH

George Newman, the rich London merchant, is an orderly and exact man. He arrives at his office every morning at half past 9 exactly. Here, sitting down at his desk, he takes out his watch and lays it before him. Then he throws a quick glance around to see if everything is in its usual place, and his clerks know quite well that he will notice at once any change that has been made during his absence.

One day a friend came to see him, and the merchant went out with him, leaving by chance his watch behind. While he was away one of the clerks wanted a book that lay on the merchant's desk; but as he lifted it up, it slipped through his fingers, fell down on the watch, and broke the glass to pieces. The poor fellow at first did not know what to do, for the merchant might be back at any moment. Then suddenly remembering that there was a watchmaker next door, he seized the watch, rushed from the room, and was lucky enough to get at once a glass of the very same shape as the one that had been smashed. So, when Mr. Newman returned, he found his watch lying as usual in the middle of his desk. But he had no sooner sat down than looking at the watch, he asked if anybody had touched it. The clerks were taken completely by surprise, and not wishing to make a direct answer they silently shook their heads. As to the culprit, he felt sure that there was no possibility of the trick being discovered. "Well," said the merchant, "if none of you has touched it, this is a very strange watch indeed. There used to be a small crack in the glass, and now it has disappeared."

History.—The aim set for the history study is that it should result in familiarity with the main factors and leading movements in world or general history, but with greater emphasis on modern history and

⁵ Cf. *Middelskolen*, op. cit., pp. 75-83; *Undervisningsplan*, op. cit., p. 4.

⁶ Cf. the writer's book: *The Direct Principle in the Teaching of Modern Languages*, Oslo, 1925.

the history of Norway. In the latter the pupils must have a good knowledge of Norway's institutions. As a prerequisite for entering the middelskole the pupil must have had considerable instruction and training in history, especially in the history of his mother country. Throughout the middelskole course the teacher is expected to present the subject as vividly as possible by lecture and narration, and to explain all material before making assignment.⁷ Three hours per week throughout the three years is the time allotted. This aggregates 360 hours or 72 five-hour weeks of recitations.

Geography.—As the aim for the study of geography the school code makes the following provision: A review of geography as a whole with special emphasis on topography, but more especially a thorough knowledge of the geography of Norway.⁷

First year: Geography of Norway in sections, then the other European countries except southern Europe. Map drawing.

Second year: Rest of Europe and the different continents. Map drawing.

Third year: A closer and more detailed study of the geography of Norway, each county and smaller division reviewed. Three recitations a week throughout the three-year course, aggregating 240 recitations. In terms of American standards this would be 48 five-hour weeks, or 2.4 semesters of work.

Natural sciences.—Here, too, the statute is explicit in defining the aim of instruction:

1. A knowledge of the most characteristic animals and plants, especially those of one's own country and those most useful to man. Then a thorough knowledge of the human body, its construction and the functions of its organs, together with a thorough knowledge of hygiene and the effects of alcoholic drinks on the system.

2. A knowledge of the principal physical laws and phenomena and of the forces operating in them.⁸

While the physical sciences occupy a very important place in the curriculum of the middelskole, they together do not demand so much time as for either foreign language, mother tongue, or mathematics. Three hours a week are allotted to biology for the first year, and two hours for the second; four hours per week are given to the physics third year. This would make a total of 360 hours or 72 five-hour weeks in the science division. In terms of American high school, it would amount to about two years of nine months each.

In order to understand better what this subject includes, the following brief outline is submitted:⁹

First year: Natural history of the animal kingdom. This will include mammals and birds. Botany is taken in season, autumn and

⁷ Undervisningsplan for Den Treaarige Middelskole. Kirke og Undervisningsdepartementet, pp. 4-5, februar, 1921.

⁸ Op. cit., pp. 5-8. A more detailed description is found in Middelskolen, op. cit., pp. 91-116.

⁹ Middelskolen, op. cit., pp. 104-106.

spring, with emphasis on physiology of plants. Classification according to Lineus. Excursions and the beginning of a herbarium.

Second year: Natural history of the animal kingdom continued. This will include reptiles, amphibians and fishes, insects, and typical lower forms of animals. Botany, autumn and spring. Review of plant organs and their functions. Coniferous and flowerless plants. Excursions and the completion of herbarium marking. Hygiene is emphasized.¹⁰

Third year: Physics—a full-year course is devoted to this subject. It covers about the same ground as a corresponding course in a standard American high school. It gives due consideration to both mechanics and forces, including sound, light, heat, magnetism, and electricity. State examination in physics is given at the close of the middelskole—same as all other subjects, except biology. Final examination in the biological subjects is given at the close of the second year.

Mathematics.—The following are the three main objectives sought: (1) Accomplishment in practical problems of everyday arithmetic; extracting the square root; solving problems in square and cube measurements. (2) Algebra, covering rational quantities and their powers,¹¹ the fundamentals concerning roots and equations of first degree. (3) An abridged course in geometry covering the main theorems on triangulation; also practical problems in construction, including polygons and circles.

Five hours per week throughout the 3-year course are devoted to the various phases of mathematics. This would mean about 600 recitations or 120 five-hour weeks.

Both oral and written examinations are required. The following questions are quite typical of written State examinations in middelskole mathematics. The first list was given in 1920 in two parts—forenoon and afternoon. The time allowed was four and three hours, respectively.

FORENOON

I

A quantity of unrefined oil is bought in America, in all 25 barrels, each containing 85 kg. oil. Wholesale price, \$4.25 per barrel. How much was the total purchase price? The oil has to be refined and thus loses $12\frac{1}{2}$ per cent of its original weight. How many kg. refined oil will remain?

Five months later this quantity of oil is sold at 2.60 kroner per liter. How much was the gain on these transactions when you calculate the loss on interest on the original purchase price at 6 per cent per year, and the cost of refining and transportation amounting to 606 kroner?

NOTE.—1 dollar = 100 cents or 3.80 kroner; 1 liter refined oil weighs 920 gr.

¹⁰ Undervisningsplan, op. cit., pp. 5-6.

¹¹ Square and cube, etc.

II

Construct a quadrilateral ABCD (successively around the figure) of which angle ACB is 90° . AB=line a , and BC=line b . (Use the lines drawn below). Besides AD=CD, and the diagonal $BD=\frac{1}{2}AC$.

A perpendicular from D on AC passes through its middle point. If extended, why would it also cut the middle point of AB? Call E the point where the perpendicular touches AC, and F where it touches AB. What kind of a quadrilateral is BCEF? Calculate the length of AC and EF when AB is 39 meters, and BC 15 meters. Calculate also the area BCEF with the same measures given.

Lines: a b

AFTERNOON

I

A rectangular water basin is 6 meters long and 4.5 m. wide and 2.5 m. deep. What is the cubic measure? In order to find out how long a time it will take to fill the basin with water from a pipe, fill a cylindrical pail from this pipe. The pail has a diameter of 34 cm., and its height is 45 cm., measuring inside. This will take one-half minute. How many liters does the pail contain? How long a time will it take to fill the basin?

II

In order to determine the specific gravity of a certain body that floats in water, fasten a brass weight of 100 grams to it. It now floats with the brass weight under it. It is noticed that half of the body is still over the water. Then fasten a brass weight of 200 grams and drop it into the water with the weight under. It is now observed that one-third of the body is above the surface of the water. Now use the formula from physics that when a body floats in water, its weight is equal to the weight of the water it displaces.

To find volume of the body (x cm.³).

To find its weight (y g.).

Now find its specific gravity. Specific gravity of brass is 8.

MATHEMATICS EXAMINATION, 1921

FORENOON SESSION

(Four hours)

I

Two quadrilateral granite pillars are ordered for a gate, each one with a globe on the top. The cross section of each pillar is square, measuring 3 dm. each side, and each pillar is 2.4 m. long. The diameter of each globe is equal to the side of the cross section of the pillar.

The pillars cost the stonecutter, ready cut but not polished, 144 kroner each. Both the globes and the pillars are to be polished separately, except that part of the pillars which will stand in the ground. This part is 7 dm. long. The polishing will cost 0.15 krone per dm.² (square decimeter). The stonecutter calculates his gain at $12\frac{1}{4}$ per cent on his outlay.

How much will the pillars cost the buyer when the freight of 120 kroner per ton is added? In making the calculation a terminal fraction of a kg. is counted as 1 kg.

The specific gravity of granite is 2.8.

II

An ice concern has 3,000 blocks of ice on hand. Since some of the customers want half blocks, a certain number of blocks must be cut in two equal parts.

During the keep and sale of the ice, 1 per cent of the whole blocks and 2 per cent of the half blocks are wasted. The whole stock of ice costs the concern 8,220 kroner. The large blocks are retailed at 3 kroner per piece, and the half blocks at 1.70 kroner a piece.

How many of the 3,000 blocks must be divided in halves in order that the earning may be 15 per cent?

AFTERNOON

(Three hours)

I

A man owns fifteen 4 per cent bonds, each one at 1,200 kroner face value. Besides, he has some money in the bank, which pays him 6 per cent interest per year.

Then he buys an apartment house for 60,000 kroner, and gives a mortgage on his property for 40,000 kroner, bearing $6\frac{1}{2}$ per cent interest per year. He pays the balance of 20,000 kroner cash. In order to obtain this cash, he sells his 15 bonds at 85 per cent market value, and draws the rest from his bank deposit.

How much must he draw from the bank?

His apartment house has four apartments, each one rents for 1,500 kroner per year. For upkeep and taxes, etc., is calculated to take $3\frac{1}{4}$ per cent of the purchase price.

Has he greater or less income than before, and how much?

His idea in buying this house was that he wanted a home for himself. Hence he rents only three of the apartments and occupies the fourth one himself. How much does his house rent actually cost per year?

II

Construct an angle of 60° . From the vertex T point off on one of its legs a section TA equal to 6 cm. Construct a perpendicular at A and call the point of intersection on the other leg of the angle C. Draw a circle which passes through A and C and which cuts equal chords from the two legs of the angle.

Explain the operation.

Call the two equal chords AB and CD. Find the degrees of the arcs BC and AD. Then find the degrees of each of the equal arcs AB and CD.

Draw the straight line BC. How large are the angles in the triangle TBC? What kind of a triangle is this TBC? How long are the two equal chords AB and CD?

MATHEMATICS EXAMINATION, 1922

FORENOON SESSION

(Four hours)

I

A quantity of 750 hl. (hectoliter) grain is bought in America for \$6.45 per hl. Each hl. weighs 63 kg. All expenses in connection with this purchase are 978.75 kroner. During the drying, reloading, and transportation of the grain it shrinks in volume $5\frac{1}{4}$ per cent, and in weight 3.4 per cent. What will then be the weight of a hl. grain when dry?

How much more per hl. of the dry grain will one receive when the price per kg. is one-half krone? What will be the percentage gain in this case? One dollar is here calculated to be equal to 3.90 kroner.

II

Construct a quadrilateral ABCD (successively around the figure) according to the following specifications: Side AB is 5 cm., angle BAD is to be 90° . A circle which passes through A, B, and D must have a radius of 5 cm. Side CD shall be tangent to this circle, and the angle BCD is to be 45° .

Explain the procedure.

The diagonal BD divides the quadrilateral into two triangles. How large are the angles in each of the triangles? Calculate also the length of the sides of each one of the triangles.

AFTERNOON

(Three hours)

I

A wire, whose specific gravity is 7.5 is used in an electric wiring. A piece of this wire $\frac{1}{2}$ m. long, weighs 47.1 g. How large is the diameter of a circular cross section of this wire?

How much would 4.5 km. of this wire weigh?

This wire is then exchanged for another kind of wire whose specific gravity is 6, and whose diameter is one-third as large as that of the former wire.

How much would the same length of wire weigh, when one uses the latter kind of wire?

II

A lottery is planned to raise funds for a public enterprise. The price for each lot is 2 kroner. By selling a certain number of lots, enough money will be obtained to buy 25 large prizes aggregating 25,000 kroner, another number of prizes at 50 kroner each, and still another number at 20 kroner each. Besides paying all cost there will still be 10,000 kroner left. The cost amounts to 5 per cent of the total amount received from the sale of lots.

The number of 20-kroner prizes shall be three times as large as the number of all the other prizes together, and the whole number of prizes shall be 2 per cent of the total number of lots.

How many lots must be sold and how many 50-kroner prizes will there be? How many at 20 kroner?

Drawing.—Drawing is given the same amount of time in the Norwegian middelskole as religion. Its importance is considerable; it functions advantageously with all other subjects; and is one of the main stimulating factors in acquiring knowledge. It is free-hand drawing rather than mechanical; is assigned to the first and second year; and is given three and two hours weekly, respectively.

Penmanship.—This subject is given once a week for the first year only. It is one of the least thought of subjects in the curriculum, although the middelskole pupils on the whole write a good hand. A copy-book system is used for this one year of instruction, but the credit and grading is based on the home work ¹² done during the third

¹² Such as themes.

year. This principle of grading would naturally keep up a higher standard of penmanship.

Physical culture.—Physical culture, like all other subjects and exercises prescribed in the Norwegian secondary education, is calculated to function in a definite way. Thus content and method or system are intended to go hand in hand, and definite exercises are followed until they are mastered. This is also true of play and sports. Every pupil in school has a part unless excused by medical advice, and thus the system is very different from American school athletics which has quite generally degenerated into simply picking and training a winning team for interschool contests. These interschool athletic contests are not known in Norway. According to the ruling of the Department of Church and Education, physical training in the secondary schools must include and emphasize the following four divisions of activities:

FOR BOYS

1. Bentzen's Tables ¹³ including the sixteenth table.
2. Play and sport.
3. Swimming.
4. Marksmanship.

FOR GIRLS ¹⁴

1. Either Bentzen's Tables with necessary adjustment for girls, or Elizabeth Lampe's Gymnastic Tables ¹⁵ with appendix.
2. Play and sport.
3. Swimming.

Besides the above program, six school days during each year, either successively or at different times, are to be used definitely for outdoor sports, such as skiing and other field exercises. The nature of these activities, as well as stated time and place, are to be designated each year by the King. The regular program of physical training covers three hours per week throughout the entire 3-year middelskole period.

Domestic art for girls and manual training for boys.—By reason of so many well-organized special schools in Norway for domestic art and science and for manual arts, as well as trades,¹⁶ no great need has been felt for stressing such in the middelskole and gymnasium, especially in view of the fact that these regular types of secondary schools are overloaded with subjects, and could not possibly take on any more in their present organization. To that may be added the fact that by far the majority of middelskole children come from homes where opportunity and inspiration for domestic and manual arts function in the lives of the children, by precept and example, so that in

¹³ A well-known illustrated text on physical training with tables of exercises.

¹⁴ Girls are exempted from examination in physical training.

¹⁵ Another well-known text.

¹⁶ Cf. Ch. V.

many cases they are taught better at home than is usually the case in the crowded classes of the middelskole. However, some attention is given to this work in the middelskole to the extent of two hours a week for the first and second year, a total of 160 periods, or 32 five-hour weeks. Sewing and needlework for girls; sloyd and kindred art for boys.

Singing.—What ought to be one of the most enjoyable exercises in school seems here to be the one least liked. The author found upon personal investigation that the children almost always disliked the singing period. The reason for that seemed to be, in most cases, that instead of singing the teacher insisted upon notation or note reading. If, on the other hand, he had engaged his class in inspirational singing for the greater part of the period, the attitude toward singing would have been different. Children (even boys) love to sing when the right psychological attitude has been instilled in them by a skillful teacher. Singing is also a great inspiration and a carrier of interest to other fields. We can not have too much good singing in schools. Notation would come easier after the class had gone on for a time singing. Only one hour a week during the first year is given to this subject, and that is far too little.

SEPARATE MIDDLE SCHOOLS FOR GIRLS

Coeducation is the general rule in the secondary schools of Norway, but there are a few separate schools maintained at public expense in a few of the cities. Nearly all of these were started by private individuals and maintained privately for many years. But, according to the operation of recent school laws, they now have been taken over by the State or community and have thus become public property. They are, however, operated in the main the same as before under private control. Some of the separate schools were for boys, but the controversy centered around the girls' schools. Most of them included two or more of the public-school grades. In the course of time these girls' schools grew into great favor with their patrons and became extremely popular, and frequently they had to maintain a waiting list, as they were unable to receive all who applied for admission.¹⁷

The result in excellent training, as well as in scholarship, was very laudable. Many school men and women, and parents generally,

¹⁷ This is true also of girls' schools in Sweden and Denmark. In the latter country it is still considered exceptionally fortunate if parents can send their daughters to certain of the private girls' schools; and as they can accommodate only a limited number, application for admission has to be made years in advance. The writer was told by the principal of one of the noted girls' schools in Copenhagen that they would give preference to girls whose mothers were graduates of the school. A professor at the University of Copenhagen told the writer the following amusing incident illustrating the above stated facts: "The first thing I did when my baby daughter was born was to call up the Zahle School for Girls asking that my newly born daughter be registered on the waiting list and to be admitted as a pupil when she becomes of school age." He added that this was not exaggerated, as he knew of other similar cases.

sponsored the cause of these schools that had given such satisfactory service. No wonder it produced much stir and discussion when it was proposed to make them all coeducational. There has been so much sincere thinking and clear-cut argumentation on this subject in recent years in Norway, built on experience and careful observation, that the American teachers ought to have the benefit of it, as the Norwegian experiment may help to solve the boy-and-girl problem in America.

As is always the case in Norway whenever school legislation is in progress of being enacted, or when any reform in school matters is proposed, the opinion of rektors, influential teachers, and teachers' organizations is sought regarding the proposed measure. When all have been heard from, or as many as cared to express themselves, these "opinions" or arguments, pro and con, of individuals or groups of individuals are usually printed by the Government in bulletin form and used in guiding the measure through the Storting, or, if a community problem, through the municipal council.

The question of keeping the girls' schools intact, as they were taken over from private ownership, and to provide for others of similar type, is now one of the educational problems agitated in Norway. It has long been recognized as such by the department of education. In 1925 the department sent out a circular letter to all the accredited secondary schools with a list of questions pertaining to the problem of separate schools or coeducation. The questions were, as follows:

What has been the result in coeducational schools: (1) Concerning discipline? (2) Concerning educational progress? (3) Concerning hygiene? (4) Do girls need more time to complete the regular courses than the boys? (5) Does experience prove that girls and boys react differently regarding the teaching of certain subjects? (6) In that case, ought there to be other subjects demanded of girls than of boys? (7) Is there any noticeable difference between girls and boys with reference to examinations? (8) Any further observation regarding the problem of coeducation? (9) Do the above factors relate themselves differently to the gymnasium than to the middelskole?

The school physicians were also asked to comment on the points related to their practice and observation.

Of the several replies that came to this questionnaire, the one from Nissens School for Girls of Oslo¹⁸ is typical. It is a lengthy document of 18 typewritten sheets, the main points and argumentation of which are here set forth.

The reply is addressed to the Department of Church and Education and indorsed by the entire faculty council of the school. Fifteen of the teaching staff had previously taught in coeducational schools or in boys' schools.

Regarding point 1, distinction is made between "outer" and "inner" discipline. By the first is meant that kind which is maintained by pressure from without, such as by laws, rules, and direction

¹⁸ Submitted by the faculty council of the Nissens School for Girls in February, 1925.

of supervision. Discipline from this standpoint is as good in coeducational schools as in separate schools since girls, in general, submit to authority more readily than boys.

But there is another important phase of the problem, the inner discipline, that these groups of teachers emphasize. It is the "personal restraint (*selvtukt*), the development of personal responsibility," the development of a willing and personal choice in subordinating oneself to authority for the sake of the common good. By reason of this psychological as well as physical difference between boys and girls, the point of attack and method in bringing about this inner discipline must be different for the two sexes.

The sense of honor is a more characteristic element in boys and good will (*velvilje*) in girls. Girls are more shy and reserved in class with boys than they are by themselves and are thus more difficult to reach by the influence of teachers. In a certain age they are especially reticent and even afraid to express themselves in the presence of boys. "At any rate," concludes the discussion on this point, "we know from experience that the girls need to be placed in situations that necessitate active initiation and originality on their part, which will strengthen their capacity for resoluteness and independent action; otherwise, they will too easily follow the lead of others."¹⁹

Concerning point two, both advantages and disadvantages in coeducation are pointed out. It is asserted that the association and common work of boys and girls do have a salutary influence one on the other, yet not for all, for in its leveling of sex differences that takes place in the training of boys and girls together, much of the valuable and characteristic traits peculiar to the individual sexes are lost. It is, however, difficult, if not impossible, for one who has not taught in girls' schools fully to appreciate these differences. An observing teacher who has taught in both types of schools has no difficulty in noticing the difference in attitude of the two sexes. In order to establish perfect confidence and cordiality, so necessary between teacher and pupils, a separation of the sexes is necessary.

Regarding the usual happy relation between brothers and sisters at home, it is pointed out that a school can hardly be expected to exercise the same influence and control over the children that a home can, and, further, that in school there are not "brothers and sisters" but boys and girls.

Concerning the question of hygiene, it is held as a primary consideration. The medical phase of the question is referred to the several published articles and treatises on the subject by Dr. Carl Schiøtz, chief school physician of Oslo, and other medical authorities.²⁰

¹⁹ If this last contention could be scientifically demonstrated to be true, it would be a determining factor in education.—L.

²⁰ Special mentioning of Dr. Karen Andersen, and Prof. Edward Lehman, of Denmark.

The answer to the inquiry of the department states, further, that according to the present organization, six class recitations a day, six days a week, with corresponding home work, may not be too much for boys but altogether too strenuous for girls, who are, as a rule, more faithful in their preparation than the boys. Girls, too, seldom react as much against overtaxation of work. They are, as a rule, more burdened with domestic duties which, in many cases, leave them no time for study.

The answer to point four calls for consideration similar to that for point three. The claim is that the regular courses for boys are too strenuous for the best welfare of the girls, if they are to be mastered in the same length of time. Two alternatives are suggested: One simply to add another year to the girls' training and spread the work accordingly. The second is to give the girls a sort of "sabbatical year" with only practical lines of activity peculiar to woman's training. The idea in both alternatives is to keep up the same high academic standards that are maintained in the traditional schools.

Point five is answered in the affirmative with reference to most subjects. Here, too, it is asserted that only teachers who have taught both in girls' and boys' schools can fully appreciate the difference involved, especially when the teacher is *pedagogue* rather than *specialist*. In some of the subjects this difference is so marked that the need for separation of the sexes is self-evident. Among these, religion is pointed out as one. The psychology of religion is well understood by the ministers, who, in their confirmation classes, separate the class (whenever possible) into boys' and girls' sections. This is not only due to a difference in attitude toward religion on the part of boys and girls, but to a natural shyness on the part of both sexes that involuntarily makes itself felt in mixed classes, and which hinders the religious influence sought.

Mother tongue and literature is another subject pointed out in the answer as being more satisfactorily taught in separate classes. The reason for this is found in the difference in the psychology of the sexes. The subject matter should be carefully selected, both for reading and composition, in order to meet this difference in taste and attitude, since the object of teaching is not only to impart knowledge, but to cause personality and native talent to unfold, and to guide and direct the pupils in cultural habits toward independent and normal types of manhood and womanhood.

The same principle holds with foreign languages as with the mother tongue and literature. Here the girls seem to be at least more interested than the boys and to make faster progress. Here, also, the subject matter is of utmost importance, since what interests boys does not necessarily interest girls.

In history this difference is very striking. Boys take to war accounts, politics, and government, while girls invariably prefer biogra-

phy and cultural history. In order to make the teaching material serve the best interests of both sexes, mixed classes will not serve. In geography the boys have a much greater interest than the girls. In natural science there is also a marked difference. Zoology is a boys' subject, while botany is a girls' subject. Physics, in its common form, is a distinct boys' subject, but could be made of great interest to girls. The same may be said of chemistry if applied more to domestic science.

Physiology and hygiene are admitted to be far more suited for separate classes, and should be taught by teachers of the same sex as the pupils.

The girls' attitude toward mathematics is rather a debatable subject, but it is asserted as being common knowledge on the part of all teachers that "there is no subject in the middelskole that causes the girls so much difficulty and consumes so much of their time and energy as mathematics." This is often carried to unreasonable proportions. Thus it would seem irrational to compel them to keep pace with the boys for whom the subject is much easier.

Other subjects are pointed out as having masculine and feminine points of attack. Gymnastics and physical culture ought, by all means, to be taught in separate classes and by teachers of the same sex as the pupils. The character and influence of the teacher is here particularly far-reaching.

Regarding changes in the content and form of subject matter now in force in coeducational schools, it is asserted that many changes are needed. Some of these are the same as pointed out in the previous answer. It is not, however, intended to establish or maintain different types of middle schools or gymnasiums for girls than the standard coeducational type or to make them in any sense inferior; but it is thought to adapt them to the needs of the girls, in training both for independent life and for the duties of home.

These two objectives must go hand in hand to solve the problem of girls' education. It is also suggested that some of the subjects be made elective; this would adjust a great many present difficulties.

In examination requirements a reform is asserted to be absolutely necessary since girls, as a rule, dread examinations much more than boys do. The need for this reform is claimed on physiological grounds, since the final examinations strike the middelskole girls in their frailest period of adolescence. On this point the faculty council, in charge of drafting the answer to the Government's questionnaire, agrees fully with the facts and arguments set forth by the Norwegian Association for the Education of Women, published in a governmental bulletin.²¹

²¹ Meddelelser Om Norges Skolevesen (Report on Norway's School System) for the year 1921, pp. 102-106.

Point eight calls for "any further remarks." The answer to this calls attention to the fact that there are many parents who demand separate schools for their daughters. It would be little short of inhuman to compel them to attend coeducational schools as the only available type for the education of girls, and especially since the mixed schools are really boys' schools in content and form, where little or no attention is given to the interest and destiny of the girl pupils.

Regarding point nine, the argument maintains that the problem is similar in both middelskole and gymnasium, and that separate schools for girls of both divisions should be maintained, not to the exclusion of coeducational schools, however, but there should be opportunity for freedom of choice on the part of both parents and pupils as to which type they prefer.

Coeducation in secondary schools has its strong practical argument in cost of maintenance. This is especially vital in smaller towns where but one secondary school can be maintained. This argument loses much of its force in cities where two or more schools are provided, and where separate schools could therefore be maintained.²² The girls' school question is deeply rooted and is given expression in various forms of public interest. This is only very natural since home functioning is a very vital characteristic of the Norwegian social order. Eighty per cent or more of the girls become home-makers, and naturally an education in keeping with the life functioning of this vast majority is held vital.

The unification of the forces in Norway for maintaining a separate type of secondary education for girls is best represented by the "Norsk Forening for Kvindelig Opdragelse og Undervisning" (Norwegian Association for the Education of Women), referred to above. This organization counts in its membership a large number of the most influential women of the country, and wields much influence in determining educational and other public questions especially in relation to women's interests. One of its signal contributions is the memorandum addressed to the School Commission of 1920.²³ This memorial contains a very clear-cut orientation in this vexing problem. While no attempt is made from the standpoint of scientific research in points of facts and figures, yet the empirical observations here set forth, by teachers of thorough training and long experience, together with their clear cut and logical reasoning, are in accordance with the findings of many of our best scholars. Much of the subject matter deals with the points in the Government's questionnaire discussed above, and shows that the problem of separate schools for girls is an actual one in Norway. The outstanding

²² While there are excellent reasons also for separate schools for boys, this phase of the question is but slightly agitated in Norway.

²³ Cf. New Code, p. 50.

feature of this rather remarkable memorial is a detailed proposition for secondary education of girls, with the same high standard as that of the mixed schools. It proposes one more school year for girls with the subject matter reapportioned and taught in the direct interest of the recognized instincts of girls and women with a large number of subjects for girls not possible under the old order.

The extra year spoken of for girls is not intended to mean one year more before entering the university than for those training in the coeducational type of schools. It does mean that this proposed new type for the higher education of girls shall be four years instead of the traditional 3-year middelskole, built on the completed public school. These four years are to constitute a completed whole of girls' higher training with graduation and proper certification, and it is intended to qualify the great majority of women (normal age 18) for their after-school life. But in the fourth year of this type there is to be a line of work offered similar to the boys' gymnasium for those who have the ability and desire to prepare for the university and the higher professions. This line of the fourth year of the higher girls' schools is to correspond with the first year of the 3-year gymnasium which may be either a girls' or a coeducational institution, preferably the former. Full freedom and advantage are thus given girls who have ability and desire to prepare for the university, but at the same time it is not made the chief objective as in the present system. It gives the girls a far better chance to find themselves and to become better orientated for the problems of after-school life.

The proposition has much to commend itself and is gaining in favor. It is strongly supported by leading educators like Rektors Föyn, Peter Grieg, Elsa Höhnke, Chr. S. Mellbye, and C. Wangenstein—all signers of the memorandum—and many others.

There is thus an actual demand for separate schools for girls in Norway, but one might infer from the wide discussion of the problem that if the present coeducational schools were made less "masculine" in character—that is, not essentially "boys' schools with girl pupils mixed in," as they really are—there would be much less demand for separate girls' schools. But even if far greater recognition of the interests of the girls in the mixed type of schools were made, it would hardly satisfy the needs for some secondary schools entirely for girls. On the conclusion of the best of modern scholarship, no educational system can safely be without them.²⁴

²⁴ G. Stanley Hall. *Youth, Its Education, Regimen, and Hygiene*, London, Sidney Appleton, 1907 Chapter on Girls' Education.

Chapter IV

The Gymnasium

ITS GENERAL AIM

While the principal aim of the gymnasium is to prepare for the different professional colleges of the university, the Polytechnic Institute, the College of Agriculture, the Military Academy, and the College of Dentistry, it is, at the same time, intended to be a school of the cultural training that people of refinement need. Many young people (especially girls) take this training for that purpose and for the social prestige that it invariably brings.

The statute defines the purpose and scope of the gymnasium as follows:

The gymnasium is a young people's school which builds on a completed middelskole foundation and furnishes its pupils with a completed higher popular education which, at the same time, may serve as a foundation for scientific research work.¹

The phrase *avsluttet høiere almendannelse*, which we have translated as "completed higher popular education," really means "a completed higher education of common interest." It excludes specialization in any lines. That fact must be borne in mind in making comparisons between the Norwegian and other school systems.

In Norway as in the United States many young people are seeking higher education. The college or university is the final goal in the straight line of educational succession and the tendency is to go that way. However, a noticeable falling off in middelskole attendance began with 1924, due to propaganda for practical education, and also to economic reaction at the time. To guard against an "overflowing" of university students, educators in Norway are trying to create greater differentiation in lines and types of education in the lower stages, especially at the close of the folkeskole. The middelskole has no differentiation or lines. All students take the same program of study and the same examination at the close of the term. But the gymnasium usually offers three lines: The *real*, the *language history*, and the *Latin*.² The real line stresses mathematics and the natural sciences, especially physics; the language history has modern languages for its main field; in the third, Latin is the major study. All the lines have the same number of recitation periods and theoretically the same amount of work both in school and at home. The gymnasiums

¹ Lov om Høiere Almenskoler. Amended 1914 and later 1919, p. 1.

² A Latin line with Greek is offered in a few of the gymnasiums. See pp. 38 and 47.

are commonly coeducational, but a few are separate for boys and girls and good arguments are advanced for both types.

Another type, the rural gymnasium, offers a 4-year course and is planned to omit the middelskole (or two years of it) by substituting folk-high-school and fylkeskole courses to which the rural people have convenient access. The pupils of the rural gymnasiums are older and more closely selected and are capable of doing heavier tasks than the average city pupils. They cover the same work and at graduation receive the same diploma.

THE CURRICULA

The curricula of the real, language-history, Latin, and Latin with Greek lines follow:

TABLE 1.—*Subjects of instruction and number of recitation periods per week for each subject in the real or scientific line*

Subject of instruction	Recitations per week			Total recitations in 3 years	In terms of 5-day weeks in the United States	In terms of 20-week semesters in the United States
	First year	Second year	Third year			
Religion.....	1	1	1	120	24	1.2
Norwegian.....	5	6	6	680	136	6.8
German.....	3	4	0	280	56	2.8
English.....	2	2	2	240	48	2.4
French.....	4	3	3	400	80	4.0
History.....	3	3	3	360	72	3.6
Geography.....	2	0	1	120	24	1.2
Natural sciences.....	4	6	8	720	144	7.2
Mathematics.....	6	5	6	680	136	6.8
Drawing.....	0	1	1	80	16	.8
Music.....	3	2	2	280	56	2.8
Physical training.....	3	3	3	360	72	3.6
Total.....	36	36	36	4,320	5,864 172.8	5,43.2 8.64

TABLE 2.—*Subjects of instruction and number of recitation periods per week for each subject in the language-history line*

Subject of instruction	Recitations per week			Total recitations in 3 years	In terms of 5-day weeks in the United States	In terms of 20-week semesters in the United States
	First year	Second year	Third year			
Religion.....	1	1	1	120	24	1.2
Norwegian.....	5	6	7	720	144	7.2
German.....	3	3	4	400	80	4.0
English.....	5	7	7	760	152	7.6
French.....	4	4	4	480	96	4.8
History.....	3	5	5	520	104	5.2
Geography.....	0	2	0	80	16	.8
Natural sciences.....	4	0	3	240	48	2.4
Mathematics.....	5	3	0	320	64	3.2
Music.....	3	2	3	320	64	3.2
Physical training.....	3	3	3	360	72	3.6
Total.....	36	36	36	4,320	5,864 172.8	5,43.2 8.64

TABLE 3.—*Subjects of instruction and number of recitation periods per week for each subject in the Latin line*

Subject of instruction	Recitations per week			Total recitations in 3 years	In terms of 5-day weeks in the United States	In terms of 20-week semesters in the United States
	First year	Second year	Third year			
Religion.....	1	1	1	120	24	1.2
Norwegian.....	5	6	6	680	136	6.8
German.....	3	4	0	280	56	2.8
English.....	2	2	2	240	48	2.4
French.....	0	5	7	480	96	4.8
Latin.....	6	7	9	880	176	8.8
History.....	3	3	3	360	72	3.6
Geography.....	2	0	0	80	16	.8
Natural sciences.....	4	0	2	240	48	2.4
Mathematics.....	5	3	0	320	64	3.2
Music.....	2	2	3	280	56	2.8
Physical training.....	3	3	3	360	72	3.6
Total.....	36	36	36	4,320	5)864 172.8	5)43.2 8.64

TABLE 4.—*Subjects of instruction and number of recitation periods a week for each subject in the Latin line with Greek*

Subject of instruction	Recitations per week			Total recitations in 3 years	In terms of 5-day weeks in the United States	In terms of 20-week semesters in the United States
	First year	Second year	Third year			
Religion.....	1	1	1	120	24	1.2
Norwegian.....	5	6	5	640	128	6.4
German.....	3	2	0	200	40	2.0
English.....	2	0	0	80	16	.8
French.....	0	3	3	240	48	2.4
Latin.....	6	7	9	880	176	8.8
Greek.....	0	6	7	520	104	5.2
History.....	3	3	3	360	72	3.6
Geography.....	2	0	0	80	16	.8
Natural sciences.....	4	0	2	240	48	2.4
Mathematics.....	5	3	0	320	64	3.2
Music.....	2	2	3	280	56	2.8
Physical training.....	3	3	3	360	72	3.6
Total.....	36	36	36	4,320	5)864 172.8	5)43.2 8.64

The gymnasium, like the middelskole, has a school year of 40 weeks of six school days each. The pupils are normally 17 years of age on admission to it and 20 at graduation from it. They enter the university *only* upon graduation from an accredited gymnasium.

COMPARISON OF THE GYMNASIUM WITH THE HIGH SCHOOL AND THE COLLEGE IN THE UNITED STATES

By the foregoing tables the gymnasium has in its 3-year course a total of 4,320 recitation periods of 45 minutes each. Assuming for the high-school student in the United States an average of 5 subjects of 5 recitations each, or 25 recitations a week, the 4,320 recitation periods in the gymnasium in Norway is equal to 864 one-subject

weeks, or 172.8 five-subject weeks in the United States. Counting 40 weeks to the year, the student in the United States would take 4.32 years to do the school work that the Norwegian youth accomplishes in three years.

But the age of the pupils in the gymnasiums in Norway is about the same as those of students in the first two years of college in the United States. The courses in the gymnasiums, in respect to both content and the qualifications of the teachers, are mostly of college grade. Much of the work in the gymnasiums of Norway must therefore be compared with undergraduate college work in the United States. Take from the total of 4,320 recitation periods the 320 for music and the 360 for physical training and 3,640 periods of 45 minutes each are left. These are equal to 2,978 fifty-five minute periods, the college standard. The average college year in the United States is 36 weeks each with a 15-hour program, or 540 recitation hours a year. By this calculation, a student in the United States would take over five years (2,978—540—5.5) to do the school work that the Norwegian student does in three years.

THE SUBJECTS OF INSTRUCTION

Religion.—Religious instruction is a definite part of the curriculum with one hour a week given to it. It is intended to have a far-reaching educative influence in the sum total of the training of the pupils and to serve as a guide in character building. The statutes define the aim as follows:

To guide the pupils into a deeper knowledge of Christianity and thereby effectuate and strengthen the religious and moral life of the pupil. This aim is to be reached by study of the Bible and the principal points in church history and the leading points in church doctrine.

Although the method of instruction is left largely with the individual teacher, the following plan is recommended and is generally followed:

1. Religious instruction is common to all classes (first, second, and third year) and is conducted in a large room or assembly hall of the school. Pupils are to bring no books.

2. Instruction is to be given in the form of lectures. In these lectures the revival and devotional elements will play an important part, as well as the scholastic.

3. These lectures constitute large or small series of two to five lectures each, or one lecture may complete a unit.

4. As lecturers may be employed, the teacher of religion, at times the parish minister or other religiously interested men, even from outside the group of theologians; once in a while also a visiting religious speaker may be called upon to conduct a session.

5. The teacher of religion in the school has the responsibility of arranging for these lectures, and must see that the subjects stipulated for the course are treated

during the three years' term of the school. He must at all events be present at all the religious sessions or classes, and be prepared to take the class in case of failure of the other.

6. At the conclusion of each lecture (which ought not to be over half an hour) the pupils should be encouraged to ask questions—and there should also be an opportunity for the members of the class to meet the speaker.

7. If the school has a choir to lead singing, each of these meetings should begin and finish with an appropriate song.

8. As far as possible the rector or principal should also be present, and invitations should be extended to the other teachers and others near to the school. The attendance of the pupils is obligatory.

Mother tongue.—This subject naturally has a large share of the work required for graduation. The amount varies from five to seven recitations a week, according to class and line. In the real (or scientific) and Latin lines the total number of recitations is about 680, or 136 five-recitation weeks, equal to three and one-half years on the high-school plan in the United States. In the language-history line the amount is 40 recitations more.

The statute again sets the aim. The students must be able to explain selections of standard literature in Old Norse and Landsmaal, as well as in Riksmaal. Further, they must acquire a knowledge of the historical development of the mother tongue and the history of its literature, as well as the ability to write compositions (essays or themes) satisfactory in both form and content. For the final examination in the language-history line, twice as large a selection of Old Norse literature is required as for that in the real division.

Content of mother-tongue courses.—As to content and form the courses in either Landsmaal or Riksmaal have much in common with freshman and sophomore English college courses in America. For every year there is a standardized pensum² upon which the examen artium is to be based. The choice of other selections and content matter is left with the instructor. It covers a broad field of both modern and classical authors, largely in the Riksmaal, but with at least one recitation a week in the Landsmaal, besides. To these are added some Swedish and Danish authors and some selections in translation from Greek and Latin authors. Much attention is paid to style and form, as well as technical instruction in syntax. Old Norse has a prominent place, and naturally it should, as it bears the same (or stronger) relation to modern Norwegian as Anglo-Saxon does to modern English.

Norwegian literature groups.—The general content of Norwegian literature may be divided into four groups: (1) That which is common in type; (2) Wergeland and Welhaven (contemporary authors); (3) the national-romantic period (Aasbjørnsen, Moe, Welhaven, Ibsen, Bjørnson); (4) the modern realistic period (Lie, Kielland, Elster, etc.).

² The amount to be covered in a year or any given term.

The following are examples of representative selections of modern classics in the Riksmåal:

Holberg—*Erasmus Montanus*, *Jeppe paa Bjerget* (Jeppe on the Mountain), *Jacob Van Tyboe*.

Wergeland—*Jan Van Huysums Blomsterstykké* (Jan Van Huysum's Flower Piece), *Jødinden* (The Jewess), *Den Engelske Lods* (The English Pilot).

Welhaven—*Norges Damring* (Norway's Dawn).

Camilla Collett—*Amtmandens døtre* (The Governor's Daughters).

Ibsen—*Kongsemnerne* (The Pretenders), *Brand*, *De Unges Forbund* (The Young People's Society), *Samfundets Støtter* (The Pillars of Society).

Björnson—*Synnøve Solbakken*, *Sigurd Slembe*, *Maria Stuart*, *Arnljot Gelline*, *En Fallit* (A Bankruptcy).

Lie—*Den Fremsynle* (The Forewise), *Gaa Paa* (Go To It), *Familien paa Gilje* (The Family of Gilje).

Kristian Elster—*Solskyer* (Sun Clouds).

Kielland—*Skipper Worse*.

The most difficult part is read in class; the balance is assigned for home reading. Essays and theme work are strongly represented throughout the entire three years:

The weekly program is thus given in brief outline form:

First year.—A. Riksmåal: A selected reading in poetry and prose of modern literature from Wergeland on. Partly by close study and the rest cursory; two weekly recitations.

B. Landsmaal: Reading of prose and poetry. Emphasis is placed on good expression in reading, and any doubtful passages are translated into Riksmåal to illustrate the difference in the choice of words and phrases and to explain the same thought in the two language forms; one regular recitation per week.

C. History of literature: Mainly biographies of authors.

D. Grammar: Chief characteristics of the Landsmaal, illustrated by corresponding forms in Riksmåal. The present type of language development.

E. Themes: Fourteen formal themes are required, of which three or four are ex tempore. Exercises in dictation and translation from Riksmåal are required in Landsmaal. The written work in Landsmaal alone occupies an hour a week.

Second year.—A. Riksmåal: Beginning of the reading of the proposed pensum for examen artium starts at this point, besides a cursory reading of a selection of *belles-lettres* literature and of didactic and argumentative prose, and at times some foreign literature in translated form. First semester three hours, second semester two hours weekly.

B. Landsmaal: Likewise in this language form begins the reading of pensum for examen artium. Points in grammar of special importance are studied. Dialectic differences are illustrated.

C. Old Norse: About 20 hours in the second semester.

D. History of literature: Biographical and literary information concerning authors are read.

E. Written work. Fourteen formal themes; three or four are *ex tempore*. Special dictation in *Landsmaal* and translation from *Riksmaal*. The written and oral work in *Landsmaal* consumes two recitations a week.

Third year.—The study of literature in both *Riksmaal* and *Landsmaal* is continued.

Old Norse: The rest of the reading for beginners is finished and 15 or 20 pages more from another selection of Old Norse literature. This reading is supplemented by thorough grammatical study and analysis. Students in the language-history division have the Old Norse pensum doubled. The balance of the third-year program is a continuation of lines drawn up for the second year. The last part of the semester is largely taken up in reviewing for the all-searching *examen artium*.

The final examination is both oral and written. The oral deals with all technical features such as syntax and style. For the written examination two themes are required and they may be in either *Landsmaal* or *Riksmaal*, but if both are in the same language form the pupil will be given an additional test to prove his knowledge of the other form. The city-bred student finds *Riksmaal* far easier; the country youth expresses himself better in *Landsmaal*. The following are typical examination themes.

(a) Give a summary of the history of the English Revolution and show its conservative character as compared with the French Revolution a hundred years later.

(b) Why has man been eager to explore the unknown regions of the earth? *

German.—Foreign languages naturally have far greater importance in Europe, especially in the smaller countries, than in the United States. This is particularly true of Norway, a commercial nation of importance. However, the arguments in favor of language study are not all on the practical or commercial side; Norwegian secondary education emphasizes strongly its cultural value. In the gymnasium three foreign languages (German, French, and English) are regularly required, besides Greek and Latin as electives. Latin is required, of course, in the Latin line, but Greek is optional. This, together with the two mother tongues and the classical Old Norse and some Swedish and Danish, seems to the American to make the gymnasium curriculum linguistically rather top-heavy; the Norwegian feels that it is justified by both practical and cultural considerations.

The statute defines the aim for this subject as follows:

The pupils shall have studied and should be able to translate a small selection of German literary works; they should be able to read and translate selections in prose not studied beforehand, and they should have such knowledge of the

* Both a and b from the *examen artium* for 1922.

language as to be able to explain in German the contents of a selection that has been studied, and to use the language in writing.¹

At the beginning of the gymnasium course the pupils have already had fully three years of German so that the subject is quite familiar to them and they are now able to enter upon advanced work. The selections read are taken from classical authors, such as Goethe and Schiller, and also from modern authors.

A definite penum upon which examen artium is to be based is early provided and constitutes a definite and leading part of the course. It must be mastered from two angles—by reading and explaining it at sight, and by writing it into good form after it has been read aloud to the class. Considerable cursory reading is also required.

The selections from a given author are calculated to be characteristically representative of him and to be conceived of as a unit or whole. They must contain the historical development of the literature of Germany, its national and social characteristics and tendencies. Aims are sought both in cultural values and in practical application of German.

Both oral and written examinations are required. The oral examination deals with grammar and other technical features of the language. The written examination has two forms: (a) Translation into German of some material, usually of historic nature of similar difficulty as the class material; and (b) writing a composition based on a narration or other material, read aloud twice in German by the censor.

English.—The English language has a large place in secondary education in Norway. The instruction is thorough; all who have gone through the secondary schools *actually speak English* and write it in a creditable way. Frequently a visitor from an English-speaking country who is trying to express himself in imperfect Norwegian is told, "You may speak to me in English. I can understand you."² The beginner in the gymnasium has a foundation in English, gained by two years of study of it in the middelskole, that is intended to correspond to the knowledge of German that he gained there in three years. English is allotted two hours a week for all three years of the real and Latin lines. In the language-history line the time is increased to five hours a week in the first year and seven hours weekly in the second and third years. Thus three times as much English is required

¹ Gymnasiet. Lov om Høiere Almenskoler, op. cit.; Bilag. Endringer og tillegg til undervisningsplanen for gymnasiet, foranlediget ved lov af 18de juli 1919 om ny gymnasieordning, pp. 1-2.

² My experience is that Europeans in America, especially those who migrated in their youth, are unable to use the mother tongue with any degree of certainty when they return to their native lands. The average unschooled mind can not retain more than one language at a time. When a person is obliged to learn a new language for daily use, he is apt to forget much of his mother tongue.

in the language-history line as in either of the other two. The principal reason for this difference is that graduates from the language-history line pursue more specifically studies in modern philology at the university and become *candidates*, majoring in English, for teachers of language.

First year: The aim for the first year is that the pupils shall be able to read and explain in English a limited selection of literature, and to converse with the teacher about its content. Further they must be able to write in good form the content of a selection considerably more difficult than that demanded at the final examination of the *middelskole*. These requirements are, of course, far greater in the language-history line. Annual examinations are held in each subject at the close of the year. These are not State examinations, as the final or *examen artium* is, but are conducted by the teachers themselves.

Second and third years: The English work in the second and third years of the real and Latin divisions is of the same volume and extent as that of the first year but much more difficult. In the second and third years of the language-history division English is a major subject with seven recitations a week during the second and third years, and five during the first. Much of the literature read deals with English social and political institutions, but in selected and limited compass so that the main point of view is the *language*, rather than the *content*. The final examination *pensum* in the language-history line is increased by about 250 pages, and some 400 pages more of lighter material is added for home reading. This home reading is accounted for either in writing or orally. Two alternatives are offered as to content: Linguistic or literary efficiency. Each class may stress one or the other. In the first, formal grammar and construction receive primary attention; in the latter, the literary form and style. A regular theme is required every other week without previous class preparation.⁷

Both oral and written final examinations are required. For the written test, candidates have the option of writing either a composition on some reading material they have gone over in the class or an original theme in English.

French.—French is not begun in the *middelskole* but in the first year of the gymnasium. By that time the student has already a good knowledge of both German and English, and he is constantly working with these languages so that the third foreign language normally becomes easier than either of the previous ones. The student now has a thorough understanding of the mechanics of grammar and he is older and thus able to work faster and to much better

⁷ Bilag. Endringer i og tilføjelse til undervisningsplanen for gymnasiet, 1919, op. cit.

advantage than he did at the beginning of the previous languages. Thus much of the explanatory details is now omitted and rapid progress is naturally made. However, the pronunciation is difficult and French has not gained the same popularity as German or English. This is perhaps mostly due to the extensive commercial relation with the two great Teuton races. French is also in Norway regarded as the polite language, and is especially emphasized in girls' schools and among the élite class, but perhaps not so much as it used to be. Each of the divisions in the gymnasium has a different penum in French. The real line has a total of 10 week-hours amounting to 2 years of 5 recitations per week. The Latin division has 12 week-hours, amounting to nearly $2\frac{1}{2}$ years of 5 recitations per week. This is also true of the language-history line. On the whole, the work is more progressive, while the method and penum are proportionately the same as in the other language courses.⁸

No written examination is required in French but the candidates are examined orally.

Latin.—Latin has had its controversial experience also in Norway. It was once king of subjects in the Norwegian secondary education. Then the instruction of Latin began as early as the eleventh year of age. But interest in modern languages began to increase rapidly. The battle between the "ancients" and the "moderns" was long and fiercely waged, resulting in a complete victory for the latter; so much so that Greek dropped out of sight almost entirely, while Latin survived as an esteemed veteran, but shorn of its former prerogatives. The main reason for this great change in linguistic opinion was due in the main to the shifting viewpoint from the Roman or classical world culture to modern ideas and modes of thinking. In the new order of things the modern languages became of far greater importance than the classical. But this great change had also a reaction. Latin and Greek were, perhaps, at their lowest estimate in Norway in the first decade and a half of the present century, when Latin was only an elective in one of the gymnasium lines and Greek had dropped out entirely. But with the law of July 18, 1919, a regular Latin line was established in the gymnasium and also a complementary Latin line with Greek as an elective. The interest in the classical languages seems to be on the increase. There is no preparatory work for Latin offered in the middelskole, hence, it must start from the beginning in the gymnasium. To do this, 6 hours a week are devoted to Latin in the first year, 7 hours a week in the second year, and 9 hours the third year, making a total of 22 week-hours or about $4\frac{1}{2}$ years' work on the 5-recitation-week plan.⁹ The aim is that "the pupil shall have studied and should be able to translate and explain a limited selection

⁸ Cf. Table 3.

⁹ Ibid.

of Latin classics so that he can translate in writing a prose selection, chiefly of historical content, that he has not studied before." ¹⁰

The first year is given to grammar and in mastering a workable vocabulary and in reading and translating easy prose. The second year is given to higher class literature and syntax.

The pensum, which is calculated for the oral examen artium, consists of " * * * at least 170 octave pages of classical prose, 70 pages of which are to be of similar grade as Caesar, and 100 pages more difficult, like Cicero and Livy. Instead of this pensum, one may read 1,200 lines of Ovid, Virgil, or Horace, in which case 30 verses of poetry are considered equal to one page of prose. Besides this pensum required for oral examination, the student should have as much cursory reading as possible." ¹¹

A corresponding pensum for the written examination is also required. The following program of courses is suggested:

First year: Textbook exercises. Thirty pages of required pensum studied. Grammar, including principal rules of syntax. Much of the material is given and practiced orally. Composition, with a view of reinforcing the study of syntax.

Second year: About 70 pages of the required pensum is read, cursory reading adjusted accordingly. Grammar continued according to authorized textbook. Written work: First semester, composition; second semester, translation.

Third year: About 75 pages of required pensum read. Cursory reading and extemporaneous composition as much as time will permit. Grammar is reviewed; composition and translation continued.

Both oral and written examen artium is required in Latin. The oral deals with grammar, syntax, and all technical features of the language. The written examination consists in translating a selection of prose or poetry from texts read in class. The following is typical:

Dum Perseus bellum contra Romanus parat, auxilia barbara tentata sunt, sed frustra. Et alia societas et Gallorum ingens oblatum auxilium avaritia regis dimissum est. Veniebant decem millia peditum, par numerus equitum. Hi pacti erant eques denos praesentes ¹² aureos ¹³ pedes quinos, mille dux eorum. Venientibus his Perseus profectus obviam denuntiare per vicos urbesque, quae viae propinquae sunt, coepit, ut commeatus expedirent. Ipse equos et alia dona principibus ferre et parvum auri, quod inter paucos divideret, multitudinem credens trahi spe posse. Ad Almanam urbem pervenit. Circa Desudabam urbem exercitus Gallorum consederat, mercedem pactem opperiens.

Eo mittit Antigonum, ex purpuratis ¹⁴ unum, qui, juberet multitudinem Gallorum propius castra movere, principes ad se venire frequentes. Haec mandata ad eos cum pertulisset Antigonus adjecissetque per quantam omnium rerum copiam cura regis praeparatam ituri essent, quibusque muneribus principes advenientes excepturus rex esset, de his se coram cognituros respondentem interrogant ecquid aurum quod in singulos pedites equitesque dividendum esset, secum advexisset. Cum ad id nihil responderetur, Clondicus, regulus eorum: "Abi, renuntia ergo," inquit, "regi, nisi aurum obsidesque acceperint, nusquam hinc Gallos longius vestigium moturos."

¹⁰ Bilag. Op. cit., pp. 4-5.

¹¹ Op. cit.

¹² Cash.

¹³ Piece of gold.

¹⁴ Courtiers.

Haec relata regi cum essent, convocato consilio cum quid omnes suasuri essent appareret, ipse pecuniae quam regni melior custos coepit de perfidia et feritate Gallorum disserere multorum jam ante cladibus experta. Cum suadere consulenti nemo auderet, remittitur Antigonus, qui, nuntiaret quinque millium equitum opera, tantum uti regem, non tenere multitudinem aliam. Quod ubi addiverunt barbari, irati domum redierunt.¹⁵

Greek.—As was noted under the discussion of Latin, Greek is beginning to reenter the Norwegian gymnasium curriculum, and a separate Greek line was provided by the school law of 1919. This new line is termed "Latin line with Greek." In this line Greek is substituted for modern languages and some of the sciences to the extent of some over 500 recitations with accompanying pensum. This would correspond to about two and one-half years measured in American terms of five recitations per week. Greek is started the second year of the gymnasium with a program of six recitations per week. In the third gymnasium year this program is increased to seven recitations per week.¹⁶

The required pensum includes parts of Xenophon's *Anabasis* Plato's *Apology*, and other Greek prose writers, including the New Testament. Of poetry, Homer is read to the extent of about 1,000 lines. Grammar is also stressed, but not very much in detail. Greater emphasis is placed on reading and translation. Of 6,335 students enrolled in the gymnasium in 1924-25 only 132 studied Greek. This shows that the subject has not yet acquired its former popularity. These 132 students were scattered among eight State and communal, and one private¹⁷ gymnasium, varying from 4 to 52 students in each one.¹⁸

Only an oral examen artium is required in Greek.

History.—The aim of instruction in history in all divisions of the gymnasium is to establish a thorough foundation of historical knowledge of the more important divisions of antiquity, and of the mother country, of France, of Germany, and of England, with special emphasis on the French Revolution, and the institutions of Norway, Sweden, and Denmark and of the other most important countries.

Recitation periods.—Three hours a week are required of all students throughout the entire 3-year gymnasium period, and two additional hours per week for students taking the language-history line, second and third year. This latter is particularly an advanced course and deals with the cultural and philosophical treatment of history. The teacher in this advanced course has a free hand, both in the selection of his material, as well as in organizing the same.¹⁹

All gymnasium history has the middelskole history as a prerequisite. No written, but oral examen artium, is required.

¹⁵ This selection was given in 1922.

¹⁶ Cf. Table 4, p. 18; Bilag. Op. cit., p. 5.

¹⁷ Kristell Gymnasium, Oslo, with 14 studying Greek.

¹⁸ Skolevesenets Tilstand, 1924-25, pp. 34-43.

¹⁹ Gymnasiet. Op. cit., pp. 93-105.

Geography.—Geography is a feature of secondary education and is taught very differently in Norway than in America. It is also a strong feature in the College of Science at the university. This difference is perhaps more in name and method of organization than real content. Much of the subject matter taught in the American schools under the heading of physiography, general science, geology, meteorology, economics, etc., is taught in Norway in connection with geography. The principal point of attack lies in the relation between the physical nature of Norway and its natural economic resources, and is thus strikingly national in character. From this application, geography has six divisions:

1. Descriptive, dealing with dimensions, shape, elevation, depth of adjoining ocean and fjords, fishing banks, etc.
2. General geology and mineralogy.
3. Historical geology applied to Norway. The distribution of minerals and the mining of same, soil, vegetation, etc.
4. Climate, isothermal lines, atmospheric pressure, isobars, moisture and precipitation, etc.
5. Zoological and botanical geography of Norway. History of the flora and fauna of the country with considerable attention paid to forestry and agriculture.
6. The first appearance of man in Norway.

To the above is added mathematical geography for 3-year students following the real or scientific line.²⁰

There is no written examination but an oral examen artium is required.

Biology and chemistry.—The natural sciences and biology are well represented in the gymnasiums of Norway. Naturally they are the strongest in the real or scientific line, where they aggregate 720 hours or recitations for the three years, or 144 weeks in terms of 5-hour weeks.²¹ For the other two lines the requirement is much less; 240 hours for each line. These requirements, as for the other subjects, are fixed by statute, which says:

The student should be in possession of a knowledge of the most important laws of chemistry and of the development of animal and plant life, together with a fundamental knowledge of human physiology and hygiene. Those who take the real line should have a deeper knowledge of physics.²²

The amount of time devoted to each one of the sciences is also definitely stated. Chemistry is given four times a week for the first semester, and two times a week the second semester of the first year. Physiology and hygiene are given two times a week during the second semester of the first year.²³ Biology is given two times a

²⁰ *Gymnasiet. Op. cit.*, pp. 106-107.

²¹ Tables 1-4, pp. 37-38.

²² *Gymnasiet. Op. cit.*, pp. 107-123.

²³ The elementary courses in this subject are given in the *middelskole*. Cf., pp. 23-24.

week during the third year, and includes zoology and botany. All courses in biology are given a related review in which all supporting factors in the theory of evolution are specially emphasized. Examen artium in chemistry and physiology is given at the close of the first year.

Physics.—The real line carries six hours per week in physics for the second and third years. The work is of college grade, and is, like all gymnasium courses, taught by experts.²⁴

Both oral and written examen artium are required. They are very searching. The following written examination was given in the spring of 1925:

I

Explain the differentiation of electric current, its use in a galvanometer with shunt, and in the measurement of resistance, using the Wheatstone bridge, and further in the measuring of electro-motor power by the compensation method.

II

Two pendulums of equal length, consisting of balls suspended by thin cords, hang side by side, just touching each other.

The centers, as well as the point of tangent, are in the same horizontal line. The balls are very elastic, and their masses are 150 and 50 grams, respectively. The lightest ball is now moved with stretched cord to the side until it reaches a vertical height of 40cm. over its equilibrium. When dropped it will hit with its lowest point in the direction of the center of the heavier ball.

To what vertical height above the line of equilibrium will the balls rebound from this first bump? What potential energy has each one of the balls now reached in their respective heights, expressed in erg and joule?

The acceleration of the weight at that place is: $980 \frac{\text{cm}}{\text{sec}^2}$. The length of the pendulum is greater than 40 cm.

III

The neck of a glass bulb is drawn out to a narrow open point. The capacity of the bulb is 0.3 liter. At the beginning of the experiment the bulb is filled with dry air of the same temperature and pressure as the air outside, i. e., 15° and 75 cm., respectively. The bulb then weighs 40.4 gr.

Liquid benzol is now poured into the bulb, and it is then put into a water bath which is kept constant at a temperature of 90°. Only the upper part of the point of the bulb is now above the water.

Since the boiling point of benzol is 80°, it will now come to a boil and in that way all air will be forced out of the bulb. When all air is thus forced out and no further steam is coming out from the bulb, it will then contain only benzol vapor of the same temperature as the water on the outside, i. e., 90°, and also holding the same air pressure, i. e., 75 cm.

The point of the bulb is now melted and sealed up, and it is taken from the bath, dried, and weighed again. It now weighs 40.835 gr.

Calculate the weight of a liter of benzol vapor at 90° and 75 cm. pressure. Then calculate its relative specific gravity compared with air of the same temperature and pressure.

²⁴ Bllag. Op. cit., p. 5.

One liter air at 0° and 76 cm. weighs 1.293 grams, and the coefficient of expansion of gas is $\frac{1}{273}$. No account is taken of the expansion of the glass. The height of the barometer and the temperature of the room are taken to be the same at both weighings.

ANOTHER SET OF TYPICAL EXAMINATION QUESTIONS IN GYMNASIUM PHYSICS ²⁵

I

Explain the static factor, levers, weights, and balances.

II

Calculate the mechanical equivalent of heat in the following measurements with a Joule's apparatus or one similar.

In a vessel, which is to serve as a calorimeter, is placed a friction apparatus. This apparatus consists of a stationary iron disc, placed in the bottom of the vessel, and above this disc is another iron disk, which revolves by two weights. This is done by means of cords running around the axis of the friction apparatus and over easy pulleys and further attached to the weights. The apparatus is covered with quicksilver. The rotation speed of the disk may be regulated.

At the beginning of the experiment, the temperature in the calorimeter is 15° .²⁶ Each of the weights weighs 4 kg. and they are lowered slowly 1 meter 20 times, the only break being the friction apparatus itself. The weights bump against the bottom, after having passed through a distance of 1 m., and each time they thus stop, they lose a speed of $\frac{1}{2} \frac{\text{m.}}{\text{sec.}}$. When the weights have fallen 20 times, the temperature in the calorimeter has risen to 16.69° .

The percentage of water in the calorimeter and the friction apparatus and other belongings = $0.154 \frac{\text{kg. cal.}}{\text{degrees}}$.

The quicksilver used weighs 2 kg., and its specific heat is 0.033. The acceleration of the weight may be stated as $10 \frac{\text{m.}}{\text{sec.}^2}$. Any loss of energy not stated above need not be considered.

Reduce the value of the equivalent you have found to the expression:

$\frac{\text{joule}}{\text{gram calori.}}$ but this time calculate the acceleration of the weight to be $9.81 \frac{\text{m.}}{\text{sec.}^2}$.

III

The glow wire in a small electric incandescent lamp receives its right current 0.2 ampere, when the difference of potentiality between its two ends is 2.2 volts.

Find the resistance of the glow wire. The lamp receives its current from a battery consisting of 4 dry cells, each with an electro-motor power of 1.5 volts and an inner resistance of 0.1 ohm. The cells are connected two in each group and these two groups are connected in parallels.

Find how long a resistance wire will be needed to connect the series of cells with the lamp so that it may receive the right strength of current, when the

²⁵ This written examination was given in 1926. The physics examination is usually given in 3 parts: I, II, and III. Only students in the real line take physics and that only in the second and third year—5 hours a week. All gymnasium examinations are held from 9 to 2 o'clock. Only one subject each day.

²⁶ Degrees of temperature are given in centigrade.

resistance in all connections is placed at 0. The diameter of the wire is 0.2 mm., and the coefficient of resistance is 0.5.

How large quantity of electricity per ampere-hour and per coulomb does the battery emit per half hour use of the lamp, and how many joules are produced in that time?

Mathematics.—The division of the subject matter in mathematics is very much different in the Norwegian system of education than in the American. Arithmetic and algebra are carried along with geometry and trigonometry. Geometry and algebra, for example, are started in the grades, while phases of arithmetic are studied in middelskole and gymnasium. No water-tight compartment of these subjects is maintained. Nevertheless, distinction is made between *regning* and *aritmetikk*. The first simply means "figuring," and the second, algebraic methods in mathematics.

State provision.—It is provided by statute that the gymnasium shall continue the work of mathematics where the middelskole leaves off. This has particular reference to algebra, geometry, trigonometry, which are required of all classes. Those taking the real line must have a more thorough knowledge of trigonometry, solid geometry, and analytical geometry. The presentation of the material is frequently done by assigning problems to be solved and criticized in written form. Logical reasoning in such cases is emphasized.

Number of recitations.—The proportion of mathematics required in the real gymnasium is greater than any other subject, except the mother tongue, which has the same number of recitations, namely, 680 for the 3-year term. This is equal to 136 five-hour weeks. For the language-history line only 320 hours of mathematics are required. All are based on a middelskole preparation of 600 hours, or 120 five-hour weeks.

EXAMINATION QUESTIONS IN MATHEMATICS EXAMEN ARTIUM

A. QUESTIONS FOR THE CANDIDATES OF THE REAL DIVISION, GIVEN IN THE SPRING OF 1926

I²⁷

In a pyramid ABCD the base ABC is an equilateral triangle whose side is equal to a . Side edge CD, which is equal to b , stands perpendicular on the base.

The pyramid is cut by a plane which is parallel both to CD and to AB, and its distance from AB is x .

Prove that the section thus cut is a rectangle. Find the area of this rectangle expressed in terms of a , b , and x . How large must x be in order that its area may be as large as possible? How large in this case is the difference between the two parts in which the plane divides the pyramid?

II

Briefly and without any special proof account for the variation of the function a^x , while x passes from $-\infty$ to $+\infty$; a is a positive number.

²⁷ Each written examination in mathematics, like in physics, is usually given in a group of 3 parts, I, II, and III.

In the same connection find what the values of z are, that make the function $(\frac{1}{2})^{6x^2-6z}$ equal, larger, and smaller than 1.

Likewise find what the values of z are, that make it equal, larger, and smaller than $\frac{1}{2}$.

IIIa

Which are the different curves represented by the equation $x^2 + ty^2 = 16$, for the different values of the constant t ?

Find by the aid of the definition for tangent, the angle coefficient of the tangent to the curve $x^2 + ty^2 = 16$ at an arbitrary point $P(x_1, y_1)$, and prove that the equation of the tangent is $xx_1 + ty_1y = 16$.

Let A be the point where the curve cuts the negative X axis, and T the point where the tangent cuts the X axis. Further, let Q be the point of intersection between the straight line PA and the straight line, which stands perpendicular on the X axis at point T . Find the equation for the geometric location of point Q . Explain the result.

IIIb 28

Find the equation of the curve passing through the point $(-2, -18)$ and which is such that the angle coefficient of the tangent is $5x_1^4 - 6x_1^2 + 1$, when x_1 is the abscissa of the point of contact.

Find the abscissae of possible maximum and minimum points.

Calculate the areas of the segments which the axis of the abscissa cuts from the curve.

Is the curve symmetrical in any way? If so, how?

Find the equation of the tangent through origin and designate all its points of intersection by the curve.

B. QUESTIONS GIVEN TO THE REAL DIVISION IN 1922

I

How can you, without the process of extracting the root, determine which one of two radical quantities is greater, if they have different exponents? For example: $\sqrt[3]{15}$ and $\sqrt[4]{37}$. Compare the radical quantities $\sqrt[2]{aq}$ and $\sqrt[3]{aq+t}$. P , q , and t are ordinary whole numbers, and a as well as the radical quantities themselves have numerical values. Which are the different incidences that may occur during this process of comparison? Try to interpret the results verbally.

II

Inscribe a body consisting of two right cones with common base in a ball whose given radius is r . The side surface of the smaller cone is the mean proportional term between the side surface of the larger cone and the common base of the two cones.

Find the side of the smaller cone and construct the figure which will appear when the ball and the inscribed body is cut by a plane through the axis of the body.

III

Discuss the geometric value of the equation $Ax^2 + By^2 = H$, when x and y are rectangular coordinates of a moving point.

In the same connection account for the different geometric values that the equation $(1+t)x^2 + (1-t)y^2 = 36$ assumes with different values of t .

* For real students who have qualified in calculation of infinitesimal quantities.

To each one of the curves obtained by the variation of t , we conceive a tangent drawn, which forms an angle of 45° with the X axis. What form will the equation assume for the geometric location of the point of contact of the tangent? (Only the form of the equation is required.)

C. QUESTIONS GIVEN TO CANDIDATES IN LATIN DIVISION 1926 ²⁹

I

The difference between the side and height of an equilateral triangle is a . Find the value of the side in terms of a .

Construct a triangle on basis of value found for the side. Try also to construct the triangle in some other way.

Use the line below as the length of a .

a

II

Determine the values of x which make each of the following expressions positive:

(a) $(x-3)(2x+5)$

(b) $4x-x^2$

(c) $2x^2-9x+9$

(d) $3x^2-4x+9$

III

What is meant by the power of a point with reference to a circle? What is the theorem of that concept?

Prove this theorem in a case where this point is inside the circle.

In a given circle the radius is 6 cm., and a point P is 4 cm. from the center of the circle.

Construct a chord which passes through P and which is divided by that point in the proportion of 1:2.

Calculate the length of the two parts of the chord, and also carry to two places of decimals the number of degrees of the arc which the chord cuts from the circle.

D. QUESTIONS GIVEN TO THE CANDIDATES IN THE LANGUAGE-HISTORY DIVISION ³⁰

I

It is taken for granted that the theorem which deals with the powers $[(a^m)^n=?]$ is proven as to the positive whole values of the exponents. Further, prove that this theorem also applies when the exponent m is a positive fraction and the exponent n is a negative integer.

Express the logarithmical theorem which is based on the power theorem stated above, and apply the same to the calculation of a^n , when $a=28.75$ and $n=-0.2416$.

II

A rectangle with a given circuit, $2a$, is to be inscribed in a circle whose diameter is d . Find the lengths of the sides of the rectangle in terms of d and a . Complete the construction and discuss the result.

²⁹ These students took mathematics only first and second year of gymnasium or about 64 weeks in all, 5 times a week during first year, and 3 the second year; 3 semesters in all on a 5-hour-week average.

³⁰ This examination was used in 1922. The amount of mathematics required in this line is the same as required in the Latin or Greek divisions.

III

Given three points, A, B, and P, but not on a straight line.

Construct through P a straight line in such a way that its distance from A and from B is in the proportion as 2 : 5.

The problem has two solutions. Explain fully the operation.

Drawing.—Drawing is required only of pupils in the real division and only once a week for the second and third year. It covers the main phases of projective and mechanical drawing.

Singing and physical culture.—To the above outline of courses of study should be added singing and physical culture, two or three hours of each per week. These, as well as the other subjects, are of advanced character and based on corresponding training in the middelskole.

Chapter V

Other Types of Secondary Schools

INTRODUCTORY STATEMENT

The two principal types of Norwegian secondary education, the *middelskole* and the *gymnasium*, have been considered in the previous chapters. More pupils attend them than attend any other two kinds of secondary schools. Further, the *middelskole* and the *gymnasium* give the only purely academic line of training and serve as practically the only preparation for higher education.

Besides these Norway offers its young people a large number of kinds of secondary schools with a wide variety of objectives. This is one of the strong features of Norwegian education, a feature that is intended to solve the difficult problems of providing educational opportunity for all the different talents and interests of the graduates of the *folkeskoler*. Some of these schools train for the various civil-service positions in such branches as the postal, railroad, and forestry services. Others prepare for trades and vocations like woodworking and metalworking, or for business, handicrafts, and art. A large number of continuation schools care for those who are not accommodated in any other type but are in need of training supplementary to that of the *folkeskole*. Exclusive of the students in the *middelskoler* and *gymnasiums*, about 30,000 are enrolled yearly in these other kinds of secondary schools, in which the admission requirement is at least the completion of the *folkeskole*. In 1921 the new registration in these schools was about 47 per cent of the total number that graduated from the *folkeskoler* for that year.

Several of these types of secondary schools, nearly all of which are subsidized by the State or the municipality or both, will now be considered.

VOCATIONAL AND SPECIAL SCHOOLS

Normal schools (Lærerskoler).—These are training schools for teachers in primary education. Strictly speaking, they are professional institutions and are not properly classified in the secondary system or under any other form. They are *sui generis*. They are 12 in number, 6 public and 6 private or semipublic. The admission requirements are based on:¹ (1) An entrance examination; (2) attainment at least equivalent to *folkeskolē* or folk-high school

¹ Frequently graduates of the *gymnasiums* enter the normal schools to qualify for teaching positions in the primary system. They complete the normal course in 1 year in a special class or division provided for such students.

instruction; and (3) recommendations for special fitness. Only a limited number of candidates are admitted each year from among those that pass the entrance tests. The courses are three years in duration. In some instances a fourth year or postgraduate course is offered.

The attendance at the 12 schools in 1925-26 was 1,672, of which 985 were men. The teaching staff was 179. For that same year 820 candidates for teaching positions were graduated—450 men and 370 women.

Commercial gymnasiums (handelsgymnasier).—These schools require graduation from the middelskole for admission and give some courses similar to those in the academic gymnasiums. Besides the usual commercial subjects like bookkeeping and business accounting, foreign languages from the standpoint of business correspondence are stressed. The regular courses are two years, but the Oslo and Bergen handelsgymnasiums offer also a postgraduate course of one year. One-year courses also are given in which much of the foreign language work is omitted and the other subjects are abridged. Graduation from the commercial gymnasiums will not admit to the university or schools of higher learning.

The best known and largest of the six or seven commercial gymnasiums, with a total enrollment of more than 1,100 students and a teaching force of about 130, is the Oslo Commercial Gymnasium (Oslo Handelsgymnasium). It has an annual attendance of over 500 students and a staff of 44 teachers. It is a communal school, governed by a board of five directors consisting of the president of the school, two business men, a school man, and a technical expert. The four last named are appointed by the mayor and city council for 4-year terms, so that one retires or is reappointed each year. The school gives stipends to students who wish to go abroad for further study.

Navigation schools (sjømannsskoler).—The schools, 20 in all, are under the Royal Department of Commerce, Navigation, Industry, and Fishery. The State contributes 75 per cent of the expenses, the community the rest. Nine of the schools train for coastwise captains (kystskippere) and for mate's examination (styrmannseksamen). Another group of nine carry the above divisions and in addition have an advanced course or division leading to shipmaster or master mariner (skibsfører). The two remaining (Oslo and Bergen Sjømannsskoler) carry all the divisions of the second group and one still higher leading to master's extraordinary examination (höiere skibsførereksamen).

The entrance requirements, common to all four divisions, is a health certificate of general physical fitness. Besides that those training for coastwise captains must have had at least 12 months' experience as seamen after their fifteenth birthday. Those entering

the mate's division must have a certificate from a superior that they have served at least 30 months as seamen after their fifteenth birthday, including at least 12 months' service in foreign waters. Those who enter the master-mariner division must have a certificate from a superior that they have had at least 42 months of service as seamen after their fifteenth birthday, and in addition they must hold the mate's certificate. Those who enter the division leading to master's extraordinary examination must have a master mariner's certificate.

The instruction in the navigation schools include higher arithmetic and mathematics, especially in their applied forms in circles and triangulation, degrees, and measurements used in navigation for correcting deviation, drift, etc. The pupils learn the uses of compasses and instruments of bearing and their proper installation; to determine the deviation of the compass for a given direction by means of terrestrial objects; and the use of apparatus for log, sounding, speed, distance, and ocean current determinations. Lighthouse and distress signals and means of preventing collision are very carefully studied, as well as all methods of life-saving.

In the divisions for mates and master mariners the work is, of course, advanced, including science of commerce, applied mechanics and mechanical engineering, law of admiralty, and oceanography. The examinations are public and conducted by a commission appointed by the Royal Department. They are both written and oral, cover all the theoretical and practical subjects, and are very searching. The successful candidate is given a certificate indicating his qualifications.

Schools for ship stewards (stuertskoler).—There are at least six such schools, ranging in enrollment from a dozen to 40 or 50 students each. Usually they are held in connection with or in the buildings of the navigation schools, though a separate boarding house is generally maintained. A few of the students live outside the institutions. Tuition varies and may be as high as 60 kroner a month. Pupils must have passed their eighteenth birthday, must have been at sea at least 12 months, and must furnish high-class statements of good health and moral character. Preference is shown to applicants who have served as cooks on boats. Completion of the folkeskole is also required for admission. The courses, from three to five months' duration, are almost entirely practical and technical and intended to make the students expert in doing the work of steward. Preferment on the rating of accomplishment, upon which the certification of attendance is based, is the form of graduation.

The State subsidy for the term 1921-22 was given to these schools as follows: (1) 75 per cent of the teachers' salaries; (2) 50 kroner per pupil for the first 10 pupils, 25 kroner per pupil for any additional pupils; (3) 5 kroner per pupil to cover the cost of examinations; and 2,000 kroner for "free places" or scholarships for worthy poor students.

Schools for ship machinists (maskinistiskoler).—No less than 11 of these located at Fredrikstad, Oslo, Tönsberg, Arendal, Kristianssand, Stavanger, Haugesund, Bergen, Aalesund, Trondhjem, and Tromsö are well subsidized by the State. They are under the Department of Commerce and conducted by a local board consisting of 5 members, 2 of whom are appointed by the department, 2 by the city council, and 1—ex officio—the principal of the school. Both day and evening courses are offered.

A. Day courses for third-class machinists (common for both steam and motor machinists).

Two courses a year are offered, each of about eight weeks duration. Entrance requirements: At least nine months work in a mechanic's shop and three months actual service on board a steamer or motor-ship; 17 years of age; health certificate (eye and ear). The subjects studied are mother tongue, arithmetic, geometry, drawing (construction, projection, etc.), mechanics, physics, steam boilers, and steam-boat engines.

B. Day courses for second-class machinists (separate for steam and motor machinists).

(a) *Steam machinists.*—The courses are five months. Entrance requirements: Third-class machinist certificate; at least 12 months service as third-class machinist; health certificate. The subjects studied are mother tongue (emphasis on report and keeping of log), English (technical expressions), mathematics (algebra, geometry, and stereometry), drawing (construction), physics (application to steam boilers and engines), electricity.

(b) *Motor machinists.*—The entrance requirements, length of term and subjects taught are the same as for steam machinists, except that motor mechanics is substituted for steam.

C. Day courses for first-class machinists (separate for steam and motor).

(a) *Steam.*—The courses are five months. Entrance requirements are second-class machinist certificate and health certificate. The subjects studied are mother tongue (including accounting), English, mathematics (continuation from second class), drawing, mechanics (advanced), electricity.

(b) *Motor.*—Length of term, entrance requirements, and subjects studied are the same as for steam machinists, except that motor mechanics is substituted for steam.

D. Special courses in motor science and electricity for first-class steam machinists. These courses are given once a year and are of three months duration.

The tuition is 5 kroner per month for all divisions (A, B, C, and D). Examination fee is 10 kroner for third-class machinists and 20 kroner for second and first class. All divisions give six hours instruction daily.

E. Evening courses (for third-class machinists only). Duration two years of eight months each (September to May). Instruction is given two hours each evening, five evenings a week. Entrance requirements for first-year course are completed folkeskole, 15 years of age, and health certificate (eye and ear); for second-year course completion of first-year course; 17 years of age; the applicant must have worked nine months in a mechanic's shop after his fifteenth birthday, and he must have served three months on board a steamship. Tuition fee is 2 kroner per month. The subjects taught and the final examinations are the same as for the day courses.

The State school for railroads (Statens jernbaneskole).—This school has separate divisions for traffic officers, conductors, firemen, and foremen. The first is at Hamar; the other three at Oslo. Each division has its own rules about the ages and qualifications of the pupils. In the first and the second divisions the age of admission is 16 to 30 years; firemen pupils must be between 18 and 23; foremen between 21 and 30. The scholastic and practical qualifications are usually determined by an examination. Even though the applicant has a middel-skole certificate, he must show technical skill also in his division. The courses for all four divisions vary from one to four years and comprise both theoretical and practical subjects, 36 hours a week. The subjects include the mother tongue, writing, arithmetic, geography, and a thorough technical knowledge of the division in which the student belongs. An appropriate certificate is given for satisfactory completion of the work in any division.

Schools or courses for postal service (postelekursene).—These schools, which are at Oslo, Bergen, and Trondhjem, are under the Department of Commerce; and give theoretical courses of six weeks with 30 hours of study a week. They carry a budget of 152,000 kroner of which 111,000 kroner are paid in wages to students until they receive appointments. When the needs of the service are filled, a school or a course may be discontinued for a year or two. The training is given in two divisions, letter post and parcel post. All students must be at least 17 years of age and for letter-post service must be graduates of the middel-skole or pass an entrance examination in some of the middel-skole subjects. For the parcel-post division, applicants must have completed the folkeskole, pass an entrance examination in the mother tongue, arithmetic, and penmanship, have had two years of experience as mail carriers, and be not over 30 years of age. The courses are theoretical and pertain to the functions of the postal service.

Schools for noncommissioned officers (underofficersskolene).—In Norway this is a very important kind of secondary education. These schools are entirely free, including board and clothing, and they have given a start in life to many a poor boy who otherwise must have gone without any training above the folkeskole. They have another

great advantage in that by a proper combination of courses students may receive the middelskole certificate also at the time of graduation and be in line for higher education, both civil and military. The infantry schools are at Fredriksbald, Oslo, Kristianssand, Bergen, Trondhjem, Harstad, and Vadsö. The cavalry and artillery division schools are at Oslo; one for the air corps is at Lilleström. They enroll about 1,000 pupils and employ some 150 teachers, nearly all of whom are officers. The budget is more than 3,500,000 kroner annually.

The requirements for admission are at least 17 years of age and the completion of the folkeskole. The course is three years with 42 hours of study a week. The instruction is high grade and practical and includes technical training in several lines. A certificate of successfully completed examination is granted.

Students desiring to enter the naval academy at Horten may be admitted to some of the lower divisions, like that for noncommissioned officers and the mine section, on a middelskole or even a folkeskole certificate.

State school for the training of policemen (Statens politiskole).—This school, which is at Oslo, is under the administration of the Department of Justice; and gives a course of three months with 36 hours of study a week. The studies deal largely with the laws and regulations on public order, health, and hygiene, and with those governing arrests and court procedures. Students must have completed the folkeskole and be in actual service in one of the police systems of the country. Graduation is on the ranking plan and merit determines promotion or appointment.

Oslo Institute of Technology (Det Teknologiske Institut).—This is an elementary school of technology which gives short courses of lectures and demonstrations on tools and the operation of machinery, and shop work and drawing. It holds exhibitions and maintains a bureau of information and consultation. It is conducting courses outside of Oslo also, especially in the use of motor machinery in farming and in the fishing industry. Its aim is to assist the trades and smaller industries in their competition with the larger industries. In 1924 there were 550 pupils; the number is now far greater.

Technical intermediate schools (tekniske mellemskoler).—These schools present a very interesting type of secondary education. Their aim is to give the technical training necessary for intermediate technical workers, such as builders, masons, assistants in State or communal service, draftsmen, contractors, industrial foremen, superintendents of smaller light and power works, shipbuilders, etc. They have 2-year courses. Two or more of the following lines are offered: Building technique, machine technique, electro technique, technical chemistry, and shipbuilding. Upon the completion of any one division, a certificate of efficiency is granted.

Applicants must have passed their seventeenth birthday, and must have spent at least two and one-half years in practical mechanical training. They must have at least a folkeskole education besides some further training in arithmetic and mathematics, drawing, and the mother tongue. A middelskole certificate will satisfy these conditions. In some of these schools a 6-month introductory course is offered that will satisfy the academic requirement of the four subjects mentioned above. The administration is vested in a local school board consisting of five members—the director or principal (ex officio), two appointed by the Department of Education, and the other two elected by the city council. The teaching staff consists of the director, head teachers, teachers appointed by the department, and temporary teachers elected by the local school board. Salaries compare with those of the middelskoler and gymnasiums. Two-thirds of the running expenses (not counting buildings and furniture) are borne by the State. The balance is paid by the city and from other contributions.

The three principal schools of this type are located at Oslo, Bergen, and Trondhjem. They have their own buildings and equipment. Each has a faculty of a dozen regular teachers or more, and a large number of special teachers. They are well attended.

Technical evening schools (tekniske aftenskoler).—These schools, communal but subsidized by the State, give forms of technical training that are the most popular offered in the cities. As a rule they are well organized and equipped and remain in session about eight months of the year. The courses are three years with the possibility of an added fourth year. Ten hours a week or about 300 hours a year is normal work. Admission is by an entrance examination that covers the folkeskole subjects, to persons at least 14 years of age. The content of the courses includes the mother tongue, civics, accounting, arithmetic, mechanical and freehand drawing, drawing pertaining to the particular trade of the pupil, and general science.

This type of school has been in operation for more than half a century but it went through a thorough reorganization in 1912. The administration is in the hands of a local board for each school, made up of the principal (ex officio) and four other members, two of whom must be technical tradesmen. Three of the members are appointed by the local civic administration and the fifth by the Overstyre or department.

The largest and best equipped of these schools is the Vaterland Technical Evening School (Den tekniske aftenskole i Vaterland) at Oslo. It has a fourth year or advanced course in several of its many divisions. It has also some special divisions with shop-work instruction in subjects like printing and watchmaking. Examinations (avgangsprøver) are held at the close of the third year. The

school is in fine quarters. The attendance is upwards of 800 pupils; the teaching staff numbers about 60.

State drawing schools (Statens tegneskoler).—These drawing schools started as early as 1839. The work was by law made obligatory for citizenship as master tradesmen (borgerskap som haandverks-mester) in 21 different trades. The rules governing supervision, qualification and appointment of teachers, etc., are similar to those of the technical evening schools. The State contributes half of the expenses, the community the other half. There are State drawing schools at Grimstad, Flekkefjord, and Egersund. Completed folkeskole is required for entrance. The work done in these schools frequently serves as a beginning or opening wedge in some industrial art or fine art.

The Elementary Mining School at Kongsberg (Bergskolen, or den elementaere Bergskole paa Kongsberg).—This small school of about one to two dozen pupils is located near the principal State-owned silver mines. Its purpose is to train foremen for mining crews. The expenses are borne by the State. Admission is to persons 18 years of age or over, of good character, graduates of the folkeskole, and with at least one year of practical work in connection with a mine. The training is from two and one-half to three years in duration. Two or three days a week the instruction is theoretical, the remainder of the six days and in the summer the pupils are doing practical work in the mine. In the summer they are given instruction in practical surveying also. Certification as to efficiency completes the course.

The State Academy of Art (Statens Kunstakademi).—It is Norway's center of fine art organized by the law of 1909 and located at Oslo. It has three divisions—Painting, sculpture, and drawing. The teachers are appointed by the King and have the legal title of professor. Pupils are admitted on recommendation. Certification as to time spent, character of work, and accomplishment is granted.

Oslo School of Trade and Industrial Art (Statens Haandverks- og Kunstindustriskole i Oslo).—Founded in 1818, under the name "The Royal Norwegian Drawing and Art School," this school is one of the oldest of its kind in Norway. The name was changed two or three times before the present one was fixed by a law of 1911. It is a State institution to which the State contributes five-ninths and the city of Oslo four-ninths of the cost of maintenance. It has exceptionally fine quarters in one of the monumental buildings of the nation's capital where the Oslo Museum of Industrial Art (Kunstindustrimu-seet) also is housed. The assumption is that school and museum will work hand in hand to further industrial art in Norway.

The Oslo school has four departments: (1) A 3-year technical evening school; (2) 2-year day trade school; (3) 1-year art industry

day school; and (4) courses for the training of drawing teachers. The 2-year day school carries the work in industrial art somewhat further than does the evening school; the 1-year day school offers post-graduate courses. Instruction is given in molding together with metal casting; carving and stonecutting; and graphic subjects such as etching, lithography, linoleum print, wood engraving, decorative painting, etc. There are shops for gold and silver smithing, book-binding, wood carving, mosaic, and inlaid work, etc. Lectures are offered on such subjects as anatomy, history of art, calculation of material for painters and house builders, etc. The school has a fine library that is open all day.

The admission requirements are possibly a little less strict than they are in the other technical schools, since the applicant need be only 16 years old to enter. The art industry division has the 2-year trade day school as a prerequisite for admission. The annual attendance is about 950. Forty regular teachers are employed besides a number of special teachers and assistants.

Trade schools (fagskoler).—They may be divided generally into two groups: (1) The forskoler, which are preparatory to the standard trade schools. About 40 of this type, not including the schools of industrial art, technical evening schools, or other special schools, are in eight different localities. (2) The fagskoler, or standard trade schools.

The forskoler, first started in 1910, aim to give the pupils such knowledge of tools and material as well as of method, that they may profitably enter a standard trade school. Those who prove themselves particularly apt may have their trade school term shortened. They are day schools, six months to a year in duration, that admit pupils who have completed the folkeskole and are 15 years of age. Work is mostly in the shop. The teacher is a competent, well-trained tradesman and may have from 8 to 14 pupils.

As to administration, each forskole has a technical board on which both employers and skilled workmen are represented. When there are more than one forskole in a city, all are under one administration, in which case the State and the community each appoints a member on the administrative board. Classed as communal institutions, the community furnishes the rooms or buildings, as the case may be, with the general equipment; employers contribute, in large measure, to the machinery and technical equipment of the shops. The State pays 40 per cent of the running expenses.

Some of the forskoler, like those of Oslo and Stavanger, offer advanced courses, also, that may be termed "postgraduate." They are intended for older students that have worked at their trades for some years, and are seeking information as to newer and better

methods in their special lines. The courses usually last eight months, the instruction is mainly theoretical.

The fagskoler, or standard trade schools, started as early as 1885. The earliest, the Skiensfjord Mechanical Trade School, received its first subsidy from the State in 1886-87. In 1901 it was taken over by the State but it receives contributions from its own and neighboring communities. Its administration is by the Department of Church and Education and a local board consisting of the director, three members appointed by the Overstyre, or head office, and one appointed by the local city council. About 15 teachers are employed.

The aim of the school is to train young men for the mechanic and electromechanic industries, and at the same time to qualify them to fill positions as foremen and job superintendents. Applicants for admission must be at least 16 years of age and must have a folkeskole education. The course is two years. The first year is common to all students and has two divisions, one for mechanics, the other for electrotechnics.

The Art Trade School of Bergen (Bergens Kunsthaandverksskole).—The aim of this institution is to furnish tradesmen advanced work in drawing and molding and to give them a better understanding of types of art work and their technical execution. In a general way it proposes to cultivate esthetic sense and taste. The courses are three years, evening sessions only, from September to June. Completed folkeskole is required for entrance. The administration is the same or similar as that of the technical evening schools.

The Bergen trade school for wood and metal industries (Bergens fagskole for tre- og metallindustri).—This school is under the direction of the Department of Church and Education. It opened first in 1887 as a sloyd school; in 1898 it was made a 2-year trade school under its present name. Instruction is given in shop work, construction, and special drawing pertaining to each trade, free-hand drawing, the mother tongue and bookkeeping, mathematics, technology, mechanics, electrotechnics; and machine technique for the metal division, and house-building technique for the wood division. A third division, with special emphasis on electricity, was added in 1919. The theoretical instruction is the same in all three divisions. Its entrance requirements and other governing rules are similar to those of other schools of this type.

Trondhjem² Trade School (Trondhjems fagskole).—This is one of the best-known trade schools in the country. It has the following listed divisions: (1) Printing, 3 years; (2) electricity, 3 years; (3) glass work; (4) photography, 3 years; (5) painting; (6) mechanics, 3 years; (7) masonry; (8) plumbing, 3 years; (9) shoe-making, 3 years; (10) tailoring, 3 years; (11) carpentry, 3 years; (12) blacksmithing, 3 years.

² The name of the city of Trondhjem has been changed to Nidaros.

Nearly every division of the Trondhjem Trade School has from four to eight months work in some recognized forskole for entrance requirement. At the completion of any one of the divisions, the student must take his svenneprøve (examination) in order to be credited as an artisan. It has its own forskoler and postgraduate courses also (svennekurser) for nearly every division. Many of the standard trade schools offer Svern³ courses or postgraduate work. These are similar to those mentioned in the description of the forskoler (p. 65), except that they are built directly on the undergraduate course of the same school.

The Women's Industrial School of Oslo (Den kvinnelige Industri-skole i Oslo).—The English is a literal rendering of the name of this institution, but the English term "industrial" does not tell the correct character of this celebrated training center for education in women's handicrafts. The Norwegian term "industri," in this case, implies art, diligence, and thrift, and has nothing to do with factory or mass production. The girls are taught the art of the various forms of tapestry and plain weaving, sketching, measurements, cutting and tailoring, pattern making, lace making, color combination and vegetable dyeing, embroidery, and all forms of needlework. They are also taught drawing, arithmetic, writing, bookkeeping, and the mother tongue. Lectures are given on the history of art and on the various phases of textile art and industry. Both elementary and advanced courses are offered. The school also trains teachers of domestic art.

The school was started in 1875 by the Society for the Advancement of Women's Handicrafts. In 1900 it was taken over by the State, but the city of Oslo contributes one-half of the running expenses. Pupils pay 60 kroner a year for courses in weaving and sewing, plus a registration fee of 5 kroner. For shorter courses, less tuition is paid. Several pupils through merit receive free places or scholarships and some have stipends.

The entrance requirements are completion of a high-grade folkeskole and certification as to moral character and special fitness. The pupils receive certificates upon completion of any one of the divisions of the school.

Other similar industrial schools.—There are at least 17 other schools of similar type in Norway, all receiving State subsidy in some form or amount, even those that are private. They are located at Fredrikstad, Oslo, Blaker Skanse, Moss, Skien, Porsgrund, Haus, Söndeled, Kristiansund, Kristianssand, Kongsberg, Mandal, Bodö, Stavanger, Bergen, Levanger, and Trondhjem. Besides these there are several societies for the purpose of cultivating household arts and handicraft for men, as well as for women. The worthiness of such an under-

³ When a person has completed trade school and passed his examination (svenneprøve), he receives the title of Svern, and thus a master of his trade.

taking is nearly always recognized by the State in the form of a subsidy.

Training schools for teachers of domestic science (laererinneskoler i husstell).—The Storting established a school of this kind at Stabekk, near Oslo, in 1908. It opened in 1909 with four divisions: (1) For teachers in domestic science schools, 1 year; (2) for domestic-science teachers in the public schools, 5 months; (3) advanced courses in domestic science, 6 weeks; and (4) course in housewifery for young girls, 5 months. Tuition is free in all divisions, but students pay a nominal price for board and room.

The entrance requirements are for the first division: Good health, completion of a young people's school in addition to the folkeskole, a forskole course in domestic science of not less than five months, and 20 to 35 years of age. For the second division: Completion of a normal school, good health, and 20 to 35 years of age. For the third division: Experience in some recognized school of domestic science and 20 to 35 years of age. For the fourth division: Good health, blameless conduct, completion of the folkeskole and one year of experience in domestic science practice, and 18 years of age or over. Final examination and certification are required when any division is completed.

Besides the school at Stabekk, there are many others of similar type established by private initiative. These schools are under the Department of Agriculture.

Training courses for social workers (Norske Kvinders Nationalraads Sociale Kurser).—The Women's National Council of Norway maintains a number of courses for the training of social workers. Qualifications for admission to these courses or schools seem to be folkeskole education, good moral character, and keen interest in the work. They last usually a year with 16 hours per week of theoretical and four hours of practical work. The summer vacation is given to practical work entirely. Some of the extension practice work is done in establishing kindergartens for children of the poorer classes and in establishing vacation colonies.

Instruction is given in the mother tongue, psychology, history, hygiene, civics, domestic science, nursing, reporting and journalizing, bookkeeping, typewriting and care of office, care for the poor and children together with the laws governing the same, woman's legal status, and lectures on various social subjects. Practical training and visits to other social institutions is conducted under professional guidance. The course is completed with certification as to ability and efficiency.

Music schools (musikkskoler).—Although music has no important place in the middle schools and gymnasiums of Norway, for reasons previously stated, it is a great factor in the cultural life of the nation.

The peculiarly charming character of the Norwegian folklore and the large accumulation of songs and melodies, so characteristic of the race, have been revealed in great musicians like Ole Bull, Grieg, Kjerulf, Nordraak, Lindeman, and, more recently, in Sinding, Haarklou, Allnaes, and David Monrad Johansen.

Two schools of music have made themselves particularly felt in Norway. They are the Music Conservatory of Oslo (Oslo Musikkonservatorium), and the Music Academy of Bergen (Bergens Musikkakademi). The first was established in 1883 by Lindeman. It has a large staff of skilled teachers and about 1,000 students. The conservatory is subsidized by the State and enjoys the personal patronage of the King. The Music Academy of Bergen is smaller and was organized more recently (1905). It receives a yearly subsidy from the city of Bergen and an occasional contribution from the State. The entrance requirements for both are musical talent and special recommendations. Certificates are granted according to the amount of time spent and the student's accomplishment.

State and fylke forestry schools (Statens skogskoler og fylkeskogskoler).—Six or seven schools of this type are located at convenient centers near Bergen, Kristianssand, Kongsberg, Stenkjaer, and Fredrikshald, in Hedmark and Telemark. Pupils must be 18 to 25 years of age. The admission requirements are one year of practical forestry and at least six months of continuation or folk high school study or the equivalent. The courses are 12 months, 8 months of which are given to the theoretical study of forestry for 36 hours a week, and 4 months are spent in practical forestry work. The theoretical study includes matters pertaining to the care of forests and trees, such as promoting healthful growth; protecting against insects, pests and fire; seeding and planting; methods of lumbering; forest evaluation and the economic use of forests. Some instruction is given in agriculture, chemistry, zoology, botany, and geology. A certificate of efficiency is granted for satisfactory completion of the course.

SMALLER SCHOOLS OF VARIOUS TYPES

A large number of smaller schools that serve a definite purpose in the secondary high-school system does not come under any of the foregoing classifications. They are schools of agriculture, housekeeping, gardening, dairying, and schools for training teachers for these institutions. One hundred and twenty-eight schools of these types had in 1926 a total attendance of more than 5,500 pupils and over 460 teachers. Some of the courses offered cover only a few months; others are much longer. Most of these schools, like those of the preceding group, carry State subsidies in some form. All require the completion of the folkeskole for admission. The largest group of

this aggregation is the housekeeping schools, or schools of domestic science and art. Sixty-five of these in 1926 enrolled more than 2,000 pupils taught by about 200 teachers.

Schools of agriculture (landbruksskoler).—The first school of agriculture in Norway was opened in 1825. The schools are of four types.

1. Schools of agriculture for large farming, 33 in number, not counting the College of Agriculture at Aas (Landbrukshøiskolen) since it is coordinated with the university, aim to train for scientific farming. The courses vary from six months to one and one-half years. The admission requirements are 18 years of age, some experience in farming, and the completion of the folkeskole course. Preference is shown for those who have had also a course in a folk high school or a young people's school. Each school is connected with a well-equipped farm and has living accommodations for the students. Most of them are owned by the fylke but the State contributes toward their maintenance in accordance with a regulated scale. They enroll more than 1,500 students and have about 167 teachers.

2. Five schools of agriculture for small farming have the same requirements for admission as do the 33 schools above and give a 6-month course of instruction that is both theoretical and practical. For these two types of schools the State appropriates 1,575,000 kroner yearly, part of which is used for experimental purposes.

3. *Schools of gardening (hagebruksskoler).*—Four schools of gardening are supported by the State and give courses of six months to one and one-half years in duration. The entrance requirements are completion of the folkeskole and a continuation school, preferably a technical evening school or a folk high school. The ages are ordinarily 17 to 19 years. Only about 40 to 50 per cent of those applying for admission are accepted. There are some private schools of this type but they also receive State support.

4. *The State school for teachers of small farming (Statens Smaabrukslærerskole).*—This school is located at Sem per Hvalstad. It gives a 2-year course. The entrance requirements are: At least 20 years of age; certification of good health; no less than one winter term at a folk high school or a young people's school; and the completion of the course in one of the recognized schools of agriculture or of gardening. It is preferred that prospective students have one or two years of practical work on a farm. Certification is based on the amount of time the student has spent at the school and the results of the examinations.

Dairy schools (meieriskoler).—There are five of these schools, one for men at Levanger and four for women, at Örlandet, Stange, Jæren and Vefsn. The course is one year with both theoretical and practical training. The entrance requirements for women are at least one

year of practical dairy work. Men must have completed some type of continuation school, preferably the middelskole examination. These schools can not fill the great demand for their women graduates.

Schools for housekeeping (Husmorskoler or husholdningsskoler).—Forty-nine schools for housekeeping are maintained in part either by the fylke or the community and the State contributes yearly about 786,000 kroner to aid in their support. There are also some private schools of this type, 16 of which are recognized by the State and aided to the amount of about 70,000 kroner annually. Applicants must be at least 16 years of age, must have had a year of practical experience in house work, and must have completed the folkeskole. Preference is given to those that have had a year in a folk high school or a young people's school. Besides these schools of housekeeping there are a number of cooking schools (kokeskoler).

Schools for nurses and alienists (skoler for sykepleiersker og sind-sykepleiersker).—Nurses for the general hospitals and for the homes for persons afflicted with mental diseases are trained in connection with hospitals. The physicians give the theoretical instruction. Beginners must be between 20 and 30 years of age and must have some education beyond the folkeskole.

Schools for midwives (jordmorskoler).—One of these schools is at Oslo; the other at Bergen. Each is connected with a maternity hospital where the students are interned. The specific qualifications are very rigid; only about 10 per cent of those who apply for admission are accepted. Beginners must be 20 to 30 years of age. The course is one year with 12 hours of theoretical study a week.

The State School of Physical Culture (Statens Gymnastikkskole).—The purpose of this institution is to train teachers of physical culture. It is open to persons that have completed the training given in a non-commissioned officers' school. The following listed courses are offered: General floor gymnastics, fencing, marksmanship, physiology and hygiene, anatomy, school hygiene, first aid, education, chemistry, and voice culture. The school has two divisions, a director and 10 teachers, and a governing board of three members.

Schools of telegraphy (telegrafskoler).—These are at Oslo, Arendal, Stavanger, Bergen, Nidaros (Trondhjem), and Tromsø. They give elementary and advanced courses in telegraphy and courses in radio. The advanced course of 11 months, with 6½ hours of instruction daily, is based on and follows the elementary course of 6 months with 7 hours instruction daily. French is studied. Students must take 755 hours of practice work. The admission requirements are a middelskole certificate and an examination in English and German dictation, geography, and penmanship. The enrollment totals about 325 pupils. The schools are under the Postal and Telegraph Department.

The Academy of Glass Painting (Akademi for Glassmaleri).—The academy, which is located at Oslo, is under the direction of a committee consisting of the Bishop of Oslo, the director of the National Art Gallery (Nationalgalleriet), the director of the Oslo Museum of Industrial Art (Kunstindustrimuseet), and the director of the Oslo School of Trade and Industrial Art (Statens Haandverk- og Kunstindustriskole i Oslo). The State contributes yearly 10,000 kroner for its maintenance. The entrance requirements are special talent and recommendation.

State courses in singing (Statens sangkurser).—In Oslo the State maintains a 4-month course in singing and voice culture to train teachers of singing. Students at these courses are, as a rule, teachers in public and private schools where instruction in singing is given.

CONTINUATION SCHOOLS (FORTSETTELSESSKOLER)

When pupils are not accommodated in any of the other types of secondary education they may be assigned to a continuation school. This type aims to extend over the period from the time the child finishes the common school to his eighteenth birthday. But the system of continuation schools in Norway is not as yet completely organized, especially its compulsory feature. The law governing this type of education dates back as far as 1889 with several amendments since. It authorizes both rural and city districts to form compulsory continuation schools up to six months a year.⁴ The State must contribute three-fourths of the running expenses,⁵ but if the school district and the community do not see fit to establish such schools there will not be any. However, a large number of continuation schools have been established. In some places they are made compulsory and in others voluntary. In either case there must be at least 10 pupils in order to receive the State appropriation. The administration is the same as for the common or elementary schools. Courses may be held both day⁶ and evening. The specially prepared common-school teachers are also employed in the continuation schools. Additional special subject teachers may be employed from outside. The content of the curriculum varies much. The difference between rural and city schools is that the former are more theoretical, while the latter hold closer to industrial training. However, special effort is made to give the girls of the rural districts practical and thorough training in housekeeping and domestic art and science generally.⁷

⁴ Par. 53.

⁵ Par. 46.

⁶ Usually in the afternoon.

⁷ The extent the system is functioning is partially set forth in Tables 1 and 2, p. 71.

TABLE 1.—Total of all evening schools for 1924-25

Num- ber of schools	Number of pupils at the beginning of the year		Reli- gion	Norwegian oral and written		His- tory	Geogra- phy	Sci- ences	Arith- metic	Pen- man- ship	Draw- ing	Sing- ing	Eng- lish subjects	Total	Expenses (kroner)		
	Boys	Girls		Riks- maal	Land- maal										Total	Of which State con- tribution	Local con- tribution
278	2,731	1,605		3,094	4,468	285	37	167	7,272	161	52	317	223	216	44,588	22,216	4,561

TABLE 2.—Total of all continuation schools for 1924-25

Num-ber of schools	Number of pupils at the beginning of the year		Total hours of teaching										Expenses (kroner)		
	Boys	Girls	Religion	Mother tongue, oral and written	History	Geogra-phy	Sciences	Arith-metic	Pen-man-ship	Draw-ing	Sing-ing	Other subjects	Total	State con-tribution	Local con-tribution
227	2, 078	1, 742	6, 386	46, 689	15, 466	9, 632	18, 703	34, 961	2, 559	7, 376	3, 182	17, 186	620, 807	430, 185	185, 025

A far-reaching plan for the reorganization of the continuation schools was proposed to the Storting in 1921. What holds it back from being enacted into law is, no doubt, mainly a financial consideration. It proposed to make secondary education in some form or another compulsory until the child reaches his eighteenth birthday. Thus every child that does not follow any of the other specific types of secondary education will have to take the continuation school type. Its aim is to supplement the common-school education with useful training along lines in which the child shows aptness and talent. Some of the content of the last years of the common school, as, for instance, the mother tongue and mathematics, is to be carried forward in advanced form, with the addition of as many new subjects as the need of the child will suggest, particular stress being placed upon vocational subjects. A main consideration is to ascertain what is most likely to be the young person's occupation in after-school life. Then, his training is to center around that idea or subject as a goal or aim in his education. With this objective in view it is further the aim of this proposed plan to correlate the physical, intellectual, and moral needs of the pupil so that he may grow into a good, responsible citizen.

CULTURAL OR INSPIRATIONAL SCHOOLS

In Norway the cultural-school idea has crystallized in three main types of institutions: The folk high school, the fylke school, and the young peoples' school. They are similar in that none is a vocational or professional school, or intended to serve as preparatory for any of the vocations or professions. They do not even articulate with any of the other divisions of the school system. Nevertheless, many young people find that training in them does serve practical ends, such as giving the education necessary to pass the admission examination to a normal school or a rural gymnasium, or to fit for positions for which no specific (only general) training is required.

Folk high schools (folkehøiskoler).—The folk high-school movement started in Norway about the same time that it did in Denmark, and in Norway also under the inspiration of Grundtvig. But the need and opportunity for this kind of education were not the same in the two countries. When the movement reached Norway the country had been independent and under a democratic government for about 50 years and did not feel the necessity of a reform such as was felt in Denmark. Consequently the folk high-school movement did not capture the whole Norwegian nation as it did the Danish.

The men who came most directly in touch with the Danish movement and resolved to do for Norway what was contemplated for Denmark were two practical schoolmen, O. Arvesen and Herman Anker, who founded the first Norwegian folk high school at Sagatun

near Hamar in 1864. The following year Christopher Bruun and Fritz Hansen established one at Vonheim in Gausdal. Here the poet Krjstofer Janson was a teacher for several years. The next move was in Sogndal (1871) by the clergyman, Jacob Sverdrup, and two years later Viggo Ullmann established a school in Østre Moland which later moved to Landvig near Grimstad and still later (1880) to Seljord. Others sprang up in quick succession.

The country was not united in favor of these schools and even concerted opposition began against them for the following reasons: First, they were of Danish origin and thus foreign; second, Grundtvig's religious views were considered heresy by many of the orthodox churchmen of Norway; and, third, the schools made a special appeal to the peasant class of people and so the folk high school leaders became the spokesmen for and carriers of the Landsmaal movement. Some of the pioneer schools were closed because of lack of patronage but others started and are doing well in other and more convenient and central locations. The financial load is carried largely by the State which contributes as much as three times the amount appropriated by the fylke, or county, in which the school is located. The following time table is that of a typical Norwegian folk high school:

TABLE 3.—Time table of the Osefold folk high school, 1924 (Olaf Funderud, director, Mysen, Norway)

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.25	General history	Chemistry	Bible study	General history	General history	History of literature
9.30 to 10.15	History of literature	Geometry	Civics	Composition writing	Chemistry	Geography
10.25 to 11.10	Grammar	History of Norway	History of Norway	Literature	Geometry	Arithmetic B. Norwegian A.
11.15 to 12	Physics (boys) Gymnastics (girls)	Domestic science (girls) Gymnastics (boys)	Physics (boys) Gymnastics (girls)	Domestic science (girls) Gymnastics (boys)	Agriculture (boys) Gymnastics (girls)	Domestic science (girls) Gymnastics (boys)
12.30 to 1.15	Arithmetic A. Norwegian B.	Arithmetic B. Norwegian A.	Arithmetic A. Norwegian B.	Agriculture and drawing (boys) Domestic art (girls)	Lecture	Arithmetic A. Norwegian B.
1.20 to 2.05	Arithmetic B. Norwegian A.	Arithmetic A. Norwegian B.	Arithmetic B. Norwegian A.		Lecture by students	Accounting
2.15 to 3	Civics	Elocution	Elocution		Singing	Hygiene
	Chorus practice, 6 to 7.15. Study I, 8.15 to 9.30.	Domestic art and metal work, 4.45 to 7.15. Study II, 6 to 7.15.	Evening worship, 8.45.	Students' assembly, 5.45. Lights out, 9.30.	Metal work. Study III (girls) 6 to 7.15.	Bathing, 5.30.

*Fylke schools and young people's schools*⁸ (*fylkeskoler and ungdomsskoler*).—These schools are like the folk high schools in that they provide adult cultural education for the rural young people, usually those who "went to work" when they completed the folkeskole and did not subsequently have the advantage of any schooling. The fylke schools differ from the folk high schools in that they were started about a decade later to combat the spread of Landsmaal through the folk high schools. For that reason the fylke schools are all Riksmaal institutions. As to the subject matter or content of courses they hold more to the academic type by stressing a fixed course of instruction. In this way they defeat, in a measure at least, the original idea of the folk high school that content should be almost nonacademic in character. The fylke schools started to admit pupils at a much younger age than the folk high schools which adhered to the Danish norm of 18 years. The folk high schools protested that this was an unfair competition. A compromise on this score was entered into when the State fixed the entrance age limit at 17 years for all three types of schools. The pupil must reach his seventeenth birthday not later than January 1 of the year he enters this type of institution.

Private young people's schools.—The official statistics do not separate this type from the folk high schools. In 1925 there were 56 of these two types of schools with nearly 3,000 students. Even though they are termed "private" they receive the same financial support from the State and county as do the other two types. They differ in the main from the other types in their religious character. The early Danish folk high schools were strikingly religious, while the Norwegian type was more liberal and even in some cases lacking in religious profession. Likewise in the fylke schools they make but very little religious profession, as their main objective is to furnish the best possible adult education in a few months' time. But the leaders in the young people's school movement look with much concern on this lack of definite religious training in the two other types of schools, as they wish religion to be more of a defined factor in the training of the youth. This religious movement in adult education is particularly noticed in the southwestern part of Norway where this type of school has taken root. In other respects this type comes, perhaps, nearer to the folk high school than does the fylke school.

The effective results from this form of adult education, as exemplified in the foregoing three types, depend entirely on the ideals set

⁸ The rural population, not the people of the cities and towns, receives the benefit of the three types of cultural schools. To meet this seeming inequality of opportunity, folkeakademier (folk academies) have been organized for the town population. They are in the form of extension work, similar to university extension in the United States, but they are not under the supervision of the university. These academies have many local organizations and constitute a lecture bureau under the Department of Church and Education. Courses of lectures usually illustrated, on a great variety of subjects of public interest, are given by specialists in subjects usually represented at the university, the college of agriculture, or the polytechnic institute. The lecture courses are extended to the rural population also.

before the young people and the fervor and enthusiasm of the teachers. When the youth is taken at the right age and placed in a suitable environment with teachers of keenest understanding of human nature and deep sympathy and zeal for his cause, the result may be marvelous—a veritable transformation of the life of the youth.

Such was the result in Denmark. There they did not scatter workable factors, but united on one main type, the folk high school.

Among the many practical results flowing from the great upbuilding work of the folk high schools might be mentioned the fact that since these schools started a great transformation has taken place in the economic life of rural Denmark, manifesting itself especially in the reclamation of arid and swamp areas that were formerly thought worthless, in the reforestation of heaths, in making unproductive land productive through laborious and costly processes, and in improving the poor soil of the agricultural districts. Prominent and extensive industries have been formed and successfully conducted on the cooperative basis, such as dairying and meat curing and packing, that have added great wealth and fame to the little Kingdom. In the dairy and cooperative industries, 80 per cent of the leaders have had their training in the folk high schools. The still greater and more astounding influence of these schools is to be found in the character of the people themselves. This has been marvelous. A veritable Renaissance in the attitude toward all lines of activity, political, religious, social, and economical. Denmark is to-day one of the most thoroughly democratic of modern governments.

While these cultural schools have not wrought so deeply into the social fiber of Norway as they have done in Denmark, for reasons previously explained, they have, indeed, been of inestimable value and a great factor in breaking up the tenacious class system and social inequality and in the unification of the Norwegian people. This is, of course, particularly true of the first type—the folk high schools. They have brought forth a new social culture which is transcendent in character because it is rooted deeply in the history and tradition of the people. Their sponsoring the purification of the national language alone has been a potent educational factor in the development of modern Norway.

While the folk high school principles may be demonstrated to be universal and true to well-known educational factors and thus of unquestionably high educational value, yet a mistake is invariably made in assuming that the unfolding of these principles would carry the same result in every land. Human nature is the same in all countries, but the individual experiences, as well as race experience, are vastly different. The accumulation of these experiences in folklore, music, poetry, tradition, religion, and history should be the inexhaustible fountain from which to draw guiding inspiration in matters of true education. That is also the folk high school idea.

Chapter VI

The Norwegian Teacher: His Preparation, Service, and Social Status

TEACHERS' TRAINING FOR SECONDARY SCHOOLS

Teaching of all types in Norway is a real profession. The cynical remark by the late Charles W. Eliot that the American teachers constitute a "teaching *procession* and not a *profession*" does not apply to the Norwegian teachers. They constitute one of the professional types, just as do lawyers and physicians. They are established and made secure in their profession both socially and economically. In this point the Norwegian system of education offers, perhaps, its greatest object lesson. The secondary-school teachers of Norway receive their education at the University of Oslo.¹ This institution has a very high standard and is typical of a high-class continental university, having five faculties or colleges—law, medicine, theology, science, and liberal arts. The latter is usually referred to as the faculty of philosophy. The entire faculty of regularly appointed professors elect the rektor (president) of the university, who serves for a term of three years. He is usually also the dean of one of the colleges. Each college elects its own dean. It follows, then, that both rektor and deans must be regular professors and leaders in specific lines. The rektor and deans constitute the akademiske kollegium (faculty council).

Length of university training.—The time needed to complete any one of these faculties varies greatly with the individual student. The average time, however, is 5 years for theology, 7 ~~years~~ for medicine, 5 years for law, and 7 years each for the faculties of science, and liberal arts; but many have to attend 8 or 9 years before they pass their final examinations.² Upon passing this final examination or embedseksamen (professional), they all receive the degree or title: Kandidat. That means that they are official candidates for appointment in the various professions according to the field of their training, as lawyers, physicians, ministers, and teachers or professors. The candidates from the faculty of science are termed "realkandidat" or

¹ The Royal Frederik University of Oslo was established by Royal resolution Sept. 2, 1811, and opened up its activities in August, 1813. Although it is fostered by the State, it is, nevertheless, virtually a self-governing institution. While its resources have to be replenished by Government appropriations, the university prepares its own budget and dispenses its own funds. The professors are appointed by the King upon recommendation of the Minister of Church and Education, and hold their positions until they reach the age limit, when they retire on pension.

² The actual time of attendance is only about 7 or 8 months per year, but students do much of their reading during the vacation season.

"cand. real," and those from the faculty of liberal arts are termed "filologisk kandidat" or "cand. philol." If they have chosen teaching as their profession they receive the additional title of lektor when they are appointed to fill a position in a secondary school. This title presupposes, however, that they have taken a semester of theoretical and practical training in pedagogy at the pedagogical seminary under the direction of the Minister of Education. No one is admitted to the university without an examen artium, representing the completion of a gymnasium course. The normal age at entrance is 20 years, and the candidate at the end of his university training will, therefore, be about 27 years of age, having spent normally 20 years in school.³

Matriculation.—Upon matriculation at the university the student decides which faculty he wants to enter. But he can not enter immediately upon his professional courses. He must spend about a year in preparatory studies prerequisite for his professional studies. For example, one who is to study theology must first spend at least one year in the study of Greek and Hebrew, as these subjects are not, as a rule, offered in the gymnasium.⁴

These courses preliminary to all the faculties are also for the purposes of orientating the student in his field and of giving him the necessary suggestions for the best method of pursuing his studies to the greatest advantage. If he enters the College of Liberal Arts he must take a preparatory course in phonetics; and if he expects to study classical philology and has not had sufficient preparation in the classical languages, or if he has to qualify for certain scientific courses that require more specific preparation than the student already possesses, he must take preparatory courses that will fit him for his field. The standard of attainment lies in the examination, and when duly passed he is fully matriculated in his professional field.

Another purpose of this first year's preliminary requirement is that the student should have studied a larger range within associated fields of work before making his final choice of specific lines for his investigation, and for the proper combination of his major and minors, which will then be the basis for his final or embedseksamen.⁵ Lectures and examinations constitute the traditional method of university instruction. A great deal of the reading material is in the foreign languages, German, French, and English. Because of the too limited sale of leading texts they can not be translated into Norwegian.⁶ Thus the linguistic training in the gymnasium is at once needed in order to be able to carry work in the university.

³ 7 years of public school, age 7 to 14; 6 years of middelskole and gymnasium, 14 to 20; university, 7 years. The average age of a lektor upon finishing his university training is 30 years.

⁴ For many years Greek was dropped from the gymnasium. A law of 1916 established a Latin line with Greek. A few schools have adopted it, and in 1925 there were 132 students taking Greek and 26 of them took the examen artium the same year.

⁵ Literally: Examination for office.

Degrees or titles.—There are two grades or titles conferred in a teacher's professional degree: Adjunkt and lektor. They differ chiefly in the amount of work required, and the examinations for the same are known, respectively, as: The adjunkteksamen, and lektoreksamen. The adjunkt examination embraces the first four years of his university training, and the other his last three years. The first is, however, not a completed *degree*, but simply a convenient division to allow a person to teach before he has finished his professional training. The aim is to have all teachers in the secondary schools lektors. Some adjunkts are, however, employed in the middelskole, but not in the gymnasium.⁶

Control of attendance.—Practically the only control of studies at the university is by examinations. There is even no classroom control of attendance, and students simply attend lectures, study, and prepare for the final examinations at the earliest time possible.⁷ Students are, however, not without guidance in the matter of study. Printed bulletins give comprehensive information and the suggestion as to the nature of the subjects and best methods of pursuing them.

We shall now quote at some length from the instructions to students given in the Studieplan:⁸

During the study for the adjunkteksamen the main emphasis on each subject studied is made with reference to its use as a teaching subject (which he is to teach). This subject receives more of a practical treatment and less of the technical than is the case with the subjects leading to the lektoreksamen.

Those who study modern languages should become acquainted with the phonetics of those languages as early as possible. The student must also know the life of the language in speech and in literature, as he can not learn to understand the development of literature except through the history of literature; he must, to a certain degree, go to its very source. Therefore, it is of primary importance, more so in connection with his major than minors, that the student supplement his required pensum with a continued reading of literature. He can not fully understand political and social history without having seen their accomplished acts and monuments. Neither can he get a complete foundation in geography without roaming through the country, first his home district, then his native land, and eventually foreign lands. In every branch it is necessary that he not only read about the subject but that he in some measure know it personally. It is recommended as of great importance that he cultivate a familiarity with scientific, literary, philosophical, and historical periodicals⁹ so as to become acquainted with current problems and acquire an appreciation of different viewpoints. In this way he cultivates a critical discernment.

Correlation of subjects.—By reason of the inner connection between the subjects, the student should not study each subject by itself before approaching the exami-

⁶ There is a well-defined movement to abolish the adjunkts and to require all candidates for secondary-school appointments to pass the lektor examination. At present both lektor and adjunkt have the teaching load about 20 periods per week.

⁷ There is, however, control in most laboratory work, and before the student is allowed to register for the final examination he must furnish evidence that he has covered the work required in his field.

⁸ Studieplan (study plan) is one of the official bulletins of the Sproglig-Historiske Fakultet, prepared by the Committee on Examinations. Fourth edition, pp. 5-10, free translation.

⁹ On file in the university library, the philological reading room, and the reading rooms of the Geographical Institute and the Nobel Institute.

nation, but as far as possible study them together. In that way, the subjects will assist each other mutually. He who, for example, is engaged in the study of Old Norse Language should at the same time study Old Norse History of Literature, and if he has besides Norse chosen German or English he should at the same time study the periods of literature in the corresponding languages. If a student has chosen history as one of his subjects besides languages he should study the general history of that country in connection with its history of literature, and if he studies the geography of a special country he ought at the same time to read its history. In this way the study of each subject becomes easier and the preparation for the examination broader.

Study of languages.—Greater stress is placed on the theoretical side of the languages in the major subject than in the minors. The theoretical treatment of languages has for its object the explanation of the modern languages through their historical development. For a Germanic language one will, as a rule, go farther back than old German, and in French to Latin, yet with occasional references to linguistic phenomena of more ancient periods. The one who has language for his major must become thoroughly acquainted with the historical development of that language. A work that will lead to a scientific study of languages is: A. Meillet: *Linguistique historique et linguistique generale*.

The lectures that deal with major subjects treat the subject matter beyond the contents of ordinary texts, deepen and illuminate it from new points of view.

The exercises consist in instructing the students in historic-philological methods, and the more elementary exercises are primarily to accustom the students to a critical treatment of texts. The advanced exercises are chiefly to point out the way to independent study of scientific questions and to establish the student in the art of lecturing or speaking.

Time required to earn university degree.—The preparation for the adjunkteksamen is calculated to require three years after finishing the introductory courses, or four years from the entrance to the university. The preparation for the lektoreksamen requires a total of six years.¹⁰ In addition to his preparation for his major and minor subjects the student must allow time for the preparation of his thesis.¹¹

The object sought in the thesis is primarily to give the candidate an opportunity to show that he has learned to use historic-philological methods. If, at the same time, he is able to produce new material, it would naturally mean an increased value of his dissertation. A criticism of older views or conclusions may be considered as new results. But it is not to be expected that more than a small fraction of the students have the native ability for original production; and since it is not primarily the object of the thesis to train people for future scientific research, a student ought not, as a rule, to use more time in its preparation than what would correspond to six weeks of consecutive and exclusive work. But the nature of the subject may be such that it has to be carried over a much longer period of time.

We have thus quoted at some length from the official bulletin of the University of Norway, giving advice and counsel to the students, because these citations furnish a comprehensive setting for the training of teachers for the middle schools and gymnasiums, and also because they illustrate important pedagogical principles.

¹⁰ While 6 years is given here as the average time, yet all lektors with whom the writer discussed the subject claimed that it takes at least 7 years.

¹¹ In his major field.

The same bulletin gives an outline of all the subjects offered in the faculty of liberal arts with reference to the requirements for both adjunkt and lektor degrees. It will not be practical or necessary to outline them all here, although they are all teaching subjects. But we shall select one that might be considered typical for them all, endeavoring thereby to set forth the extent of training and scholarship of a would-be teacher in the Norwegian secondary schools.

English as a minor or major.—Since languages, including the mother tongue, constitute the larger half of this faculty, we shall take English as a fair representation of them all. In making this comparison between the requirements in American universities and those of the University of Norway, one must bear in mind the fact that English is a foreign language in Norway and the mother tongue in America. The requirements for English in the University of Norway will need to be compared rather with German or French in an American university. If we selected Norwegian for our illustration, then the corresponding type would be English in America.

The whole subject matter of any language is divided into two grand divisions: Requirements for adjunkteksamen, and for lektoreksamen. Each of these is divided into three parts: (1) History of literature; (2) the study of the language; (3) the examination.¹²

A. REQUIREMENTS FOR ADJUNKTEKSAMEN, ENGLISH AS A MINOR

At first the work is directed with a view of gaining complete mastery of the living speech, a work that will be necessarily continued throughout the entire period of study. This may be combined with the study of the pensum in reading the more recent authors first.

1. *History of literature.*—The order of study of the required pensum and especially that of Shakespeare will depend in some degree upon the series of lectures that have been planned or already started, as a few of the listed works may be exchanged for others with the consent of the professor.¹³

Several pioneer authors and for their time central and conspicuous figures are not represented in the obligatory pensum. The chief consideration for the student is not to gain a general or superficial knowledge of the English language and literature in all periods, but rather to concentrate on the language form and literature in one or two periods and to make a small part of this wide field his personal possession. Therefore, the chief weight is placed on the prose authors of the Victorian age and on Shakespeare. By the study of the age of machinery one learns to know a culture period not yet terminated. Carlyle, Macaulay, Dickens and Thackeray, Tennyson and Browning, Darwin, Mill, and Spencer—each one in his own way—leads the student into the English language and life of culture. They also belong to history and may be studied scientifically by the aid of a larger biographical material.

In the study of Shakespeare it is recommended that comparison be made between the Shakespearian play and the older representation of its story or fable. In that way the student can, with a comparatively small expenditure of time,

¹² As a minor the subject is usually studied to include the adjunkteksamen.

¹³ This and the following in quotation is the writer's free rendering from the Norwegian.

attain to a good understanding of the world's greatest dramatist and his method of work. In this study the student will find help in Chr. Collin's essay, *The Genial Man* which is soon expected to be worked over into book form.

Although Chaucer does not belong to the required pensum the student should read at least the prologue to the *Canterbury Tales* in a modern English version.

Sefton Delmar's *English Literature from Beowulf to Bernard Shaw* is recommended for the present as a manual of history of literature in the minor division of the subject. For the principal periods from the Renaissance to modern time Henry S. Pancoast's *An Introduction to English Literature* is suggested. In the *Encyclopaedia Britannica* may be found good biographical sketches of the individual authors.

According to the requirements one must have a review of the development of literature in connection with a review of the sociological development of English history. Such a review is found in A. F. Pollard's *The British Empire* (Vol. J). An indispensable minimum of knowledge of the present social order of Great Britain is found in Aug. Western's *English Institutions*. There is also recommended Justin McCarthy's *A Short History of Our Own Times*, which clearly and comprehensively illuminates the historic background of the Victorian age.

Then follows a long list of bibliography available in inexpensive editions.

2. *The study of the language.*—Students are requested to take part in the practical exercises and attend the lectures which are especially started in the minor courses, and should avail themselves of every opportunity to hear good English spoken and to read as much as possible of English literature aside from the required pensum. Light reading like Kipling, Oscar Wilde, Bernard Shaw, H. G. Wells, John Galsworthy is recommended, likewise G. K. Chesterton's essays, and others. Easy historic literature, especially biographies, together with newspapers and periodicals, are of much value.

Then follows a list of standard works on the English language which are recommended.

3. *The examination.*—During the examination the student will be given three subjects or theses. One will be linguistic in character and requires grammatical treatment and interpretation. The other will be chiefly of a literary nature dealing with history of literature and other history as a background. The first one is to be written in Norwegian and the second in English. The third thesis is to be more specific and to constitute a real test in modern English. The oral examination is conducted partly in English and partly in Norwegian.

B. REQUIREMENTS FOR LEKTOREKSAMEN ENGLISH AS MAJOR

1. *History of literature.*¹⁴—For a major pensum, students must read Pancoast's book in full, besides Ker's *English Literature* (medieval), dealing with Middle English literature. For Chaucer's life and works read A. F. Pollard's *Chaucer*. Biographical literature is important. Students should be thoroughly acquainted with the *Dictionary of National Biography* besides briefer ones like those of Ward's *English Men of Letters*; Marzials's *Great Writers*, and many other similar collections. In connection with the study of Byron and Shelley, the student should read G. Brandes' *Naturalism in England*, also Dowden's *Shelley*, and Mayne's *Byron*. In connection with the study of Shakespeare is recommended Dowden's *Shakespeare*, also the same author in *His Mind and Art*; Bradley's

¹⁴ Beginners are referred to what is said A-1, the minor division, pp. 81-82.

Shakespearian Tragedy; George Brandes' works in three volumes, and Schück's in two volumes, and Sidney Lee's *The Life of William Shakespeare*. Further reference is made to the latest volumes, *The Statesman's Year-book*, and *Hazell's Annual*, but especially the new edition of the *Encyclopedia Britannica*, and *Social England*, an illustrated history of English culture published in six volumes by Trail and Mann. Also *Englisches Real-Lexicon* by Klöpfer; Gardiner's *Student's History of England*, and Green's *A Short History of the English People* are recommended.

It is further recommended that all the English students possess a copy of the Authorized Version of the English Bible and the Oxford Shakespeare complete.

George Eliot's *Amos Barton* should be read, especially in Wesenberg's *Commentary Edition*; Thackeray's *Book of Snobs* with Eitrem's *Commentary*; Addison's and Steele's *Coverley Papers* with *Commentary* by Deighton; Bacon's *Novum Organum*, English version in Lubbock's *Hundred Best Books*; ¹⁵ Pope's *Essay on Man* with Mark Pattison's *Commentaries*; ¹⁶ Hume's *Essays* and Darwin's *Origin of Species* in *The World's Classics*; Goldsmith's *Vicar of Wakefield* in Chamber's *Standard Authors*, and several others.

Especially in connection with the preparation of the main thesis are recommended works like *The Cambridge History of English Literature* and Courthope's *History of English Poetry*.

2. *The English language*.¹⁷—The natural thing to do is to begin the work in Old English before one starts on the Middle English pensum. The order may depend on the lectures in progress, but, at any rate, the student should have a knowledge of Old English phonetics and inflections.

Sweet's *Anglo-Saxon Reader* is used as an introductory text and Skeat's edition of the *Canterbury Tales* for Middle English. As general manuals in language history there are recommended U. Lindelöf's *Grundzüge der Geschichte der Englischen Sprache*; Jespersen's *Growth and Structure of the English Language*, or Bradley's *The Making of English*, and Jespersen's *Større engelsk grammatik paa historisk grundlag*; likewise Krüger's *Englische Syntax*, which is used in special research.

For a more intensive study of phonetics one should use D. Jones's *An Outline of English Phonetics*, and Western's *Englische Lautlehre*, which treats definitely of the relation between sound and written form. In J. Storm's *Englische Philologie* one can find besides material on sound, comprehensive information concerning modern linguistic usage. D. Jones's *An English Pronouncing Dictionary* is very good.

Other auxiliary works are: Sievers's *Abriss der angelsächsischen Grammatik* (or the larger edition); Wright's *Old English Grammar*; Bülbring's *Altenglisches Elementarbuch*; and *The Arden Shakespeare* (for the individual plays).

The foregoing works are all available in the university library, together with the large *New English Dictionary* which gives exhaustive information concerning derivation and changes of meaning of words. There are also found several dictionaries of Americanism and slang; Wright's *Dictionary of Dialects*; Bosworth-Toller's and Sweet's *Anglo-Saxon Dictionaries*; Stratmann-Bradley's *Middle English*, and Skeat's large *Etymological Lexicon*.

3. *Examination*.—For the examination the candidate is given two propositions of similar content as those for the adjunkteksamen, but both are to be written in English. He may write his principal thesis either in English or in Norwegian. The oral examination is conducted mainly in English.

¹⁵ Routledge.

¹⁶ Clarendon Press.

¹⁷ Beginners are referred to what is said under A-2, minor division, p. 82.

Concerning combinations of subjects it would depend upon whether the student is more interested in history of languages than literature together with cultural history. In the former case the one who chooses English for his major may be advised to take French or Norwegian for one of the minors. If one is especially interested in literature and cultural history and chooses English for his major, he may be advised to choose French or history for one of his minors. Greek and Latin may also be considered.

Thus we have cited an outline of courses and material used in the training of the English teacher. For other languages the work is similarly organized.¹⁸ Besides history of languages, geography with ethnography may be chosen as a major or a minor in this faculty or college, but no subject from any other faculty may be substituted toward the degree of cand. philol., although students have access to lectures in other faculties if they are interested and can find the time.

A language teacher in Norway is thus a specialist of high attainment and of long training. He has one language as his major subject and at least one other as a minor. A teacher instructs in only one language in the gymnasium but may have two in the middelskole, if it is a small school. A history teacher has had history for his major and ordinarily one language and geography for his minors. Comparatively few teachers choose Greek and Latin since the demand for such teachers is small. The practical difference resulting from the two grades of teachers, adjunkt and lektor, is that the former, as a rule, is limited to positions lower than the gymnasium, like the middelskole, while a lektor is not so limited and may be either a regular teacher in the gymnasium or the rektor (principal) at an advanced salary. A lektor may also teach in a middelskole and is frequently its rektor. The policy is to employ only lektors for the chief positions in the middelskole.

Teachers of sciences and mathematics.—The training of the teachers of mathematics and of the natural sciences is similar to that for teachers of history and languages, but it is distinct and independent of the latter. The work is directed by the Matematisk Naturvidenskabelige Fakultet (the Faculty or College of Science) of the university. In order to enter the College of Science one must be a graduate from the scientific division of an accredited gymnasium, and thus in possession of a real examen artium diploma. A graduate from any of the other divisions of the gymnasium may matriculate in the College of Science by taking an additional examination in mathematics and physics—the same as required of the regular realist.¹⁹ When he is

¹⁸ In the same bulletin referred to above a similar outline with suggestions is made for the other major and minor subjects in the College of Liberal Arts, like Norwegian, German, French, Latin, Greek, history, geography, and ethnography. In a similar bulletin of the Matematisk-Naturvidenskabelige Fakultet (College of Science) all the main divisions of the physical and biological sciences as well as of mathematics are outlined in a similar way; in some cases even more complete than the English above.

¹⁹ A realist is a student of mathematics and natural sciences. Cf. Studieplan for Matematisk-Naturvidenskabelig Embedsexamen.

thus matriculated the student chooses four subjects from the following list of 10: Mathematics, mechanics, physics, chemistry, astronomy, geography, mineralogy and petrography, historic geology and paleontology, botany, and zoology with physiology. There are two divisions in this college, the same as in the College of Liberal Arts, and three of the four subjects (minors) required are covered by the examinations of the first division, and the fourth (the major) by that of the second division. Those who do not choose mathematics either as a major or minor subject must submit to an examination in a course of mathematics that would be equal to a year's work of mathematics in the university preliminary course, including the elements of differential and integral calculus applied to problems in physics and higher mathematics. In this course, and in the examination, greater stress is placed on the application of mathematics than on its aspect as a pure science. This mathematical requirement the student must have satisfied before he takes the examinations of the first division.²⁰ Those who have chosen teaching as their profession will need to select the combination of their subjects so as to best suit the conditions in the schools. Several of the subjects have teachers' courses,²¹ but they can not be counted toward the regular examination requirement; nevertheless, would-be teachers avail themselves readily of the opportunity. All courses in this college have both lectures and laboratory or practical work. Many of the students plan to become scientists²² rather than teachers, and the fundamental principle all through the college is scientific, rather than didactic. When the student has passed his examinations for the first division, which is normally at the end of four years, then he becomes eligible to a position as teacher in a secondary school below the gymnasium, in one or two of his three subjects. When he has finished his second division and is thus a full cand. real., he is eligible to a position in the gymnasium, usually in his major field, or to a rectorship, or to some governmental scientific position such as experimental chemist, zoologist, geographer, surveyor, etc.

Degree of Doctor of Philosophy.—This final examination, in addition to an acceptable thesis, is all the university requires for the degree of Doctor of Philosophy. Either a cand. real. or a cand. philol., who desires the degree of Doctor of Philosophy (Ph. D.) may prepare a dissertation acceptable in scope and character, and submit himself to the respective faculty for a *disputation*. If he sustains his points or contentions he is created a Doctor of Philosophy.²³ Often, for some

²⁰ The first division is normally completed at the end of the fourth year.

²¹ Tilleggskurser; lit., additional courses.

²² I. e., research workers.

²³ It is possible in Norway that a highly specialized scholar may receive the degree of Doctor of Philosophy in his special field without first having taken the second division examinations, or embedsexamen. Such a one also becomes eligible to a professorship, either ordinary or extraordinary, but such cases are rare.

time before, he gives lectures as docent ²⁴ at the university in his major subject. After he has received his doctorate he is preferred for appointment to a professorship in the university. The degree of doctor in any one of the five faculties is granted only on personal research work, coupled with an accepted dissertation. A candidate in medicine (cand. med.) may be appointed to any medical practice, but has not the degree of Doctor of Medicine. He is styled *laege*, which means *physician*. To become a Doctor of Medicine he must, in addition to his medical training, make a definite contribution in some department of medicine, and write and defend a thesis.

THE PEDAGOGICAL SEMINARY

It has long been felt in Norway that the system of training teachers for the secondary schools did not provide sufficiently for scientific pedagogy. Scholarship had been considered the main standard of attainment and in this point the system has reached an unusually high degree of excellency that would hardly be surpassed in any other country. The professors at the university are primarily *scientists*, not *pedagogues* or educational experts in the modern sense of the term. Modern educators in many countries have come to regard education as a distinct field for scientific research and that all science and all knowledge worthy to be acquired or taught should be taught according to definite educational principles. A profound knowledge of mathematics is only a part of the mathematician's equipment for work. He must become an expert in the art of imparting mathematical knowledge to others. Without this invaluable attainment, which can only be acquired through scientific educational training, the teacher will fall short of accomplishing what he otherwise could have done; and what is true of mathematics is true of all subjects in this respect. To remedy this obvious defect in the Norwegian educational system, educators in all departments have been at work for many years.

Many interests have had to be considered and many obstacles and objections have had to be met, not only in the training of teachers for the middelskole and gymnasium, but for the public school as well. It was felt that the latter needed four years, instead of three, of regular normal training, which would afford an opportunity for more subject study, including a foreign language and additional work in mathematics and science, than is possible in the 3-year plan. That would give the teacher a better scholastic standing in comparison with the gymnasium graduates. Then, too, it was argued that they should have a course of one or two years of graduate work in educational subjects, including educational psychology. The Storting finally

²⁴ Instructor.

approved of a measure establishing an advanced normal training school at Trondhjen carrying a 1-year course. This school is free, though not obligatory, to all regular public-school teachers who are normal graduates. But the 4-year normal school is yet to be attained (1928). It has strong backing among the folkeskole teachers and among educators quite generally. Regarding the establishing of a pedagogical seminary for secondary-school teachers in connection with the State university, Dr. Otto Anderssen, the first rektor of the seminary, writes:²⁵

In 1899 the Department of Church and Education requested Rektor Otto Anderssen to prepare a plan for a pedagogical course with corresponding examination at the university. His plan was in the main accepted by the Educational Commission which incorporated it in a law that was passed in 1905. This law provides that the university candidates²⁶ who choose teaching as their profession shall have the opportunity to take a course in theoretical and practical pedagogics of one semester at the Pedagogical Seminary and to submit to the examination connected therewith. This to be a condition for appointment as lektor, adjunkt, or rektor in State or communal institutions, or as principal of accredited private schools. The King may dispense with the requirements regarding adjunkts and principals of private schools. The Pedagogical Seminary opened its activities in 1907 when Rektor Otto Anderssen was appointed rektor of the same. In 1909 he received the title of professor. A system of rules and regulations governing the seminary was adopted in 1907. The instruction in theoretical pedagogics, methodology, psychology, and hygiene was to be given at the seminary; the practical training was to be given in the accredited schools of Kristiania (Oslo).

Character of pedagogical training.—An American educator who is accustomed to the 2-year university schools of education, with two or more years of graduate work besides, will consider the Pedagogical Seminary of Norway rather incomplete.

It is granted that the candidates who avail themselves of this one semester of pedagogical training are men of very high scholastic attainment in their teaching subjects which have engaged their energies and talents for many years, and who have thus a large capacity for acquiring the theories of methods and pedagogics in general in a comparatively short time. But a pedagogical seminary or an educational department in a university should have more to offer than a semester in theory and methods. One would expect to find subjects such as educational psychology, middelskole and gymnasium administration, child psychology, philosophy of education, comparative education, principles of education, history of education, educational tests and measurements, and other educational subjects that have become household terms in modern schools of education.

Since the establishing of the Pedagogical Seminary all university candidates for teaching positions have been obliged to take the one

²⁵ Norges Høiere Skolevesen, 1814-1914. Prof. Dr. Otto Anderssen, Kristiania (Oslo), 1914, p. 56.

²⁶ Cand. real., cand. philol., cand. theol.

semester offered, yet the seminary itself has not been an integral part of the university. It has, however, been completely supported by the State. The reason for this peculiar relationship is not so difficult to understand when one is familiar with local conditions. There were two possible ways open for incorporating the seminary into the university: One by establishing a separate faculty or college on a par with the other faculties and with an accredited dean; the other by making it a department under the College of Liberal Arts. The first proposal was defeated by several objections from the university itself. One should bear in mind that the University of Norway is practically a self-governing institution without a board of regents to hamper its progress. Few changes, therefore, can come from outside control. The university holds to the five traditional faculties, or colleges, as stated before. Two of these faculties furnish nearly all the teachers for the secondary schools. Neither of them has a very large attendance. To establish a teachers' faculty or college would draw most of the students from the Scientific and Liberal Arts Colleges; hence the strong opposition to this proposal from these two already established colleges.²⁷ Furthermore, we must consider the opinion and feeling shared by most of the university professors that education as a science is not a sufficiently developed field to merit a university faculty or college.

The second proposal to incorporate the work of the seminary under the faculty of philosophy or liberal arts was strenuously opposed by the friends of the seminary, because in that way it would become the tail instead of the head. The proponents of the seminary would rather see a college of education, similar to the College of Agriculture or the Polytechnic Institute, established apart from the university. Several educational leaders, including Dr. Thorstein Höverstad, have labored for the latter plan, which, no doubt, is what the country needs very much.

Since the death of Professor Anderssen, the Pedagogical Seminary has been supervised by Rektor Carl Knap under the direct control of the Department of Church and Education, although it still maintains home quarters at the university.

Final examination.—It is quite interesting, as it is significant, to note the nature of the examinations given at the end of the semester. The following is the written examination given to the group of 18 students who were graduated in the spring of 1927. It was given in two parts. The first was common to all students, but the second part divided the content between science teachers and language-history teachers.

Part I.—A proposition in general pedagogics: Explain the presentation of the subject as an important factor in the course of instruction.

²⁷ Cf. Table 6, p. 6, number of students in attendance at the university.

Part II—A proposition in subject methodology: Candidates in philology have the choice between the following forms. (a) Explain the method in written exercises in teaching German; or, (b) How would you treat the year 1814 in a class of middelskole history of Norway? Point out the material which you wish especially to use, and the method you would employ in order to produce the most satisfactory result.

Real candidates have also an option. (a) The following problem was given at the middelskole examination in 1918:

Choose a point A. Draw a circle around A with a radius of 3.5 cm. Choose a point B, 7 cm. from A, and draw a circle around B with a radius of 2 cm. Construct with a radius of 5 cm. the circles which are touched inside by the circle around B and which cut an arc of 120° from the circle around A. Call the center of one of the circles sought E, and call the common chord for this circle and the circle around A, CD. Calculate CD and the circular line AE with an accuracy of 1 mm.

Proposition: A teacher gives this problem to the graduating class of the middelskole. It is noticed that some of the pupils are not able to perform the constructions indicated; others do not understand how to attack the solution of the problem, and still others do not understand how to extract the square root properly, or do not give the answer in terms of the required accuracy.

Make a demonstration of how you would proceed to explain this problem to a class, and at the same time take advantage of the several points that the problem gives occasion to utilize and refresh mathematical knowledge and methods; (or,)

(b) Present a plan for giving a lesson introducing the subject ammonia and spirit of sal ammoniac in a beginning gymnasium class, and set forth the leading considerations.

The grades awarded were: Three satisfactory; 15 very satisfactory; total, 18.

METHOD OF APPOINTING UNIVERSITY PROFESSORS

The extreme care and precaution taken in the appointment of professors at the University of Norway may be noted by the following procedure in vogue:

1. The vacancy is advertised by the Department of Church and Education.

2. Applications are received at the department.

3. A committee of scholars in the field of the vacancy, or of that faculty, is appointed by the faculty itself to review applications. This committee is frequently selected in whole or in part from other universities—usually of Sweden and Denmark. The purpose of this committee is to make nominations.

4. If, on the face of these applications, no candidate is found of unquestionable merit, a limited number of them are selected to give series of lectures (forelesninger) on subjects usually named by the committee, but in the fields of the candidates. A candidate may also

be asked to give one lecture on a subject of his own choice, but not on a matter that he has presented in public before. If these candidates, or any of them, are found competent, nominations are made. But if the committee finds no one competent, they are all rejected and no nomination is made to the department, and the vacancy remains open, or a docent is assigned to take care of the work temporarily.

THE STUDENTS' ASSOCIATION AN IMPORTANT FACTOR IN THE TRAINING OF TEACHERS

The University of Norway has a students' association, the *Studentersamfund*, that functions extraordinarily, not only in the lives of the students while attending the university, but afterwards in their professional lives as well. The striking difference between the *Studentersamfund* and similar organizations at American universities is of such importance that a few paragraphs on the subject may not be amiss.

Origin of the Studentersamfund.—The *Studentersamfund* dates back to the very beginning of the university (1813). The first 17 matriculated students constitute its charter members. At first it was mainly a social or literary club, but it began early to play an important rôle in the public life of Norway.

In 1820 the *Studentersamfund* extended its membership to gymnasium graduates who matriculated or registered at the university.²⁸

The foregoing gave the organization in its early years a large membership, and as it included also the alumni and the professors of the university it became a very distinguished organization of academicians.

There are several subject groups within this organization, such as the history club, mathematics club, etc., and musical and art clubs, some entirely separated, others more or less closely connected with the general *Studentersamfund*.²⁹

In order to understand better the extraordinary influence that the Norwegian *Studentersamfund* has had upon the development of the nation during the past hundred years, several contributing factors need to be noticed:

1. The selective process that operates in the aggregate of the student body of the university. This process begins early, even in the public schools, but especially in the *middelskole* and gymnasium. At

²⁸ It is customary for all who successfully complete a gymnasium to matriculate at the university whether they are ready to attend there or not. This matriculation gives the individuals a definite social standing, that of *akademisk borger* (i. e., college citizen), that they otherwise would not have. This matriculation is further the formal initiation into the general society of academicians.

²⁹ Fraternities, sororities, athletic teams, and other organizations of that type, which constitute such a disproportional part of extracurricular activities in practically all American universities, are hardly known at the University of Norway. This fact makes it possible for the students to concentrate their public efforts along the main channels of the *Studentersamfund*.

the close of the latter there are still six years or more ahead. Those who do undertake the "university way" are young people with a marked determination and excellent ability, for others drop off before reaching the university. Besides, many do not consider higher education a desirable undertaking except for those who show native ability and interest. Thus, as a rule, it is only the capable and serious-minded students who undertake university training.

2. The University of Norway is the recognized cultural center of the country. There all the civil authorities had their start. There the members of the legal profession and of the bench had their training. There the bishops and clergy finished their preparation for church service. There too, the medical men of the country received their training and initiation in the science of healing, and there the teachers and professors of secondary and higher education became leaders in their different sciences and arts. The University of Norway has had a magic hold upon the development of the country whose learned men of science and letters are guiding the progress and development of young Norway. Being in close touch with universities of other countries gives it also a peculiar charm, a cosmopolitan atmosphere as the fountain head of the noblest in the attainment of a people.

3. The development of democracy in a country like Norway, with a strong aristocratic background, is a constant challenge to serious discussion. The liberal and conservative groups clash almost on every hand, politically, socially, and religiously. These struggles at times have their start in the conclaves of university groups or from the cathedras of the professors, or in the parliamentary enactments or judiciary decisions, or among the people themselves. No matter where they start, they invariably find a responsive hearing in the *Studentersamfund*. Many of the discussions deal with the merits of men of letters like Wergeland and Welhaven, in the earlier days, and Björnson and Kielland later on. The unprecedented volume of high-class literature in Norway during the nineteenth century furnished volumes of material for discussion, both at home and abroad. Georg Brandes, Denmark's matchless literary critic, kept literary Scandinavia aglow for more than a generation with well-directed criticism of the works of her greatest authors. The students of the University of Norway kept in close touch with the literary and other movements that agitated the minds of the people. Especially were the dramatic productions on the home scene an object of furious attack. It was not uncommon that concerted action was taken by students attending theater performances of which they disapproved by giving booing and hissing demonstrations. Such demonstrations were persisted in until the objectionable play or parts thereof were eliminated. These critical discussions were not confined to the assemblies of the *Studen-*

tersamfund, but occurred in groups and clubs as well. Men of science or letters from foreign countries were also invited to speak and discuss problems of both national and world import. The public press and religion, as well as politics and social affairs, come in for their share of attention. Thus the platform of the Studentersamfund became a public forum whose influence frequently carried beyond national boundary lines. Especially was this true of Denmark and Sweden. Frequently Government officials were the target, and the members of the Storting would take notice of the protests and resolutions adopted in the Studentersamfund. Perfect academic freedom, free and untrammelled discussion and participation in all public movements, is a great educational stimulus and can not but greatly modify and broaden the minds of students.

Wholesome influence on teachers.—The singularly independent attitude of the Norwegian secondary-school teachers, no doubt, comes from the unlimited academic freedom enjoyed throughout their many years of training. No wonder the teachers of Norway are able to stand together, effectively resisting encroachments upon their professional and personal rights.

The Studentersamfund has its own building, erected in 1860, with a fine auditorium and clubrooms, all equipped and furnished from private contributions and subscriptions. It has several literary works to its credit. Among others, a history of the organization in two large volumes, written by Dr. Frederik B. Wallem. It was completed for the one hundredth anniversary jubilee in 1913. It is called *Det Norske Studentersamfund Gjennem Hundrede Aar, 1813-1913*.³⁰

Besides this jubilee publication, there is another that especially deserves mentioning here. It is a series of biographical sketches of all the students of the university from its founding, one volume for each year, since 1813. These sketches are embellished with photographs or pictures, two for each person. One shows how he looked while a student at the university or possibly at the time of his graduation from the gymnasium. The other picture shows the professional man several years or decades afterwards. It is a fine picture study of young men³¹ and their counterparts in later life—ministers, lawyers, judges, physicians, professors, teachers, politicians, and business men. It is a very praiseworthy undertaking, nobly carried out, and worthy of imitation.

³⁰ The Norwegian Students' Association During One Hundred Years. Published by the Studentersamfund and printed by H. Aschehoug & Co., Oslo.

³¹ Women were not admitted to the university before 1882.

SALARIES OF TEACHERS IN SECONDARY EDUCATION AS COMPARED WITH SALARIES IN OTHER PROFESSIONS

Salaries in Norway are not high in comparison with salaries paid in the United States, but they are not so low as a superficial study of statistical data would seem to indicate; there are several contributing factors that need to be considered before intelligent comparison can be made. Cost of living in Norway varies greatly in comparison with American prices of commodities. Some of the goods are much higher and some lower. Imported goods have usually the same price as in the producing country when the respective currency is at par. There has been (since the World War) a great discrepancy in the exchange rate between Norwegian and American money, but now the krone has risen to par again.³² In matters of clothing and house rent, the krone will buy as much in Norway as 50 cents will buy in the United States. That is true of several other necessities. In many other things, especially luxuries, 15 or 20 cents in America buys as much as the krone does in Norway. On the whole, a man in Norway on a salary of 8,000 kroner³³ will fare far better than a man on \$2,000 in America. Were it not for the taxes (income), which are so much higher there than here, his 8,000 kroner would be as good as \$3,000 in actual purchasing power.

The best way to get an intelligent conception of teachers' salaries in a given country is not so much by comparing the same directly with corresponding salaries of other countries, as by comparing the salaries of teachers with those of other professions within the same country, for which similar time of preparation and quality of service are demanded. For these purposes we have selected eight typical groups³⁴ with the corresponding salary paid in kroner. All of these professions have their corresponding types in the United States, but all of them are not public officials here as they are in Norway. In most cases there is a minimum or beginning salary with two or more increases at regular intervals until the maximum has been reached.

The following groups of salary schedules represent a typical comparison between salaries of teachers of secondary education and those of other professional people in the State or municipal employ (sums in kroner):

GROUP I. REKTORS, LEKTORS, AND ADJUNKTS

Rektor, class A.....	min..	10,000+2 increases 1,000 each.....	max..	12,000
Rektor, class B.....	min..	9,000+2 increases 1,000 each.....	max..	11,000
Lektor.....	min..	5,000+6 increases 500 each.....	max..	8,000
Adjunkt.....	min..	4,000+6 increases 500 each.....	max..	6,500
Average.....				7,000
				9,375

³² The Norwegian krone at par is worth 26.75 cents, which in practical computation may be given as 27 cents in U. S. money.

³³ Plural of krone. 1

³⁴ Professions that have two or more degrees of official types.

SECONDARY EDUCATION IN NORWAY

GROUP II.—PROFESSORS

University.....	min..	10,000+3 increases 1,000 each.....	max..	13,000
Polytechnic Institute.....	min..	10,000+3 increases 1,000 each.....	max..	13,000
College of Agriculture.....	min..	10,000+3 increases 1,000 each.....	max..	13,000
Average.....		10,000		13,000

GROUP III.—JUDGES

Justice Supreme Court.....	min..	12,000	max..	12,000
Associates.....	min..	8,500+4 increases of 500 each.....	max..	10,500
District Judge.....	min..	10,000+1 increase of 1,000 each.....	max..	11,000
Average.....		10,167		11,167

GROUP IV.—ATTORNEYS

Attorney General (Riksadvokat).....	min..	10,000+1 increase of 1,000.....	max..	11,000
District attorney (Statsadvokat).....	min..	6,000+fees, about.....	max..	12,000
Average.....		8,000		11,500

GROUP V.—POLICE ADMINISTRATION

Fylke administrator (fylkesman).....	min..	13,500 (small population).....	large..	15,000
Chief of police.....	min..	7,000 (city, small type).....	large..	12,000
Assistant Inspector.....	min..	7,500+3 increases 500 each.....	max..	9,000
Average.....		9,333		12,000

GROUP VI.—ARMY OFFICERS

Brigadier.....	min..	10,000+1 increase of 1,000.....	max..	11,000
Colonel.....	min..	7,000+3 increases of 500 each.....	max..	8,500
Major.....	min..	6,000+4 increases of 500 each.....	max..	8,000
Captain.....	min..	5,000+5 increases of 500 each.....	max..	7,500
Average.....		7,000		8,750

GROUP VII.—PHYSICIANS

Medical superintendents.....	min..	5,000 (small places).....	large..	14,000
Fylke physicians.....	min..	11,000+2 increases.....	max..	13,000
District physician.....	min..	7,000+3 increases.....	max..	10,000
Hospital physicians.....	min..	6,000+3 increases 500 each.....	max..	7,500
Average.....		7,250		11,125

GROUP VIII.—BISHOPS AND MINISTERS IN THE STATE CHURCH

Bishops.....	min..	10,000.....	max..	12,000
Ministers.....	min..	5,000 to 6,000+6 increases of 500.....	max..	8,000
Average.....		7,500		10,000

Total average for 8 groups: minimum, 8,231; maximum, 10,865.

With the exception of the King, the Prime Minister, and members of the diplomatic corps, the highest salary paid to State or communal officials is 15,000 kroner,³⁵ and there are very few that reach that sum. In most cases there is a pay increase for the third, sixth, and ninth year of service. In some offices this increase is added every third year until the twenty-first year of service. The increase is usually 500 kroner; in other cases, 1,000 until the maximum is reached.³⁶

³⁵ About \$4,000 in American money.

³⁶ These data on salaries were compiled from Norges Statskalender, the official State directory for 1924.

A few other salary schedules might be mentioned here also. They are suggestive, but not so typical as those of the eight groups tabulated on pages 93 to 94.³⁷

*Salaries of principals and teachers in special schools **

	Minimum	Maximum
	Kroner	Kroner
Folk high school teachers *		7, 500
Principal of deaf school		8, 000
Teachers in deaf school		6, 500
Principal, Women's Industrial School	5, 000	6, 500
Teachers, Women's Industrial School	4, 000	6, 000
Technical middle schools, principal	10, 000	
Department teachers	6, 000	9, 000
Trade schools, director	10, 000	
Department teachers	5, 000	7, 000

* The principals and teachers in the special schools here named do not need to be university trained.

† In many cases principals and sometimes teachers have house rent free or at reduced cost with garden advantages, etc.

‡ Oslo, Bergen, Trondhjem.

§ Supported by the State.

While the average salary of secondary-school principals and teachers is not quite so high as the average of some of the groups and not quite so high as the total average of all the groups, yet it compares very favorably. The difference is less in the maximum than in the minimum. But if we compare individuals or ranks within the teaching profession with those of other groups a greater similarity will be observed. Thus a rektor's salary compares favorably with that of a university professor, district attorney, a chief of police in a large place, a judge of the superior court, a bishop in the State church, or a brigadier general of the regular army. Then, again, a lektor's salary compares favorably with that of some of the district attorneys, chief of police in a small city, assistant police inspector, a district physician, a parish minister in the State church, or a major in the regular army.

The position of adjunkt is an emergency position. It is a convenient title for an assistant. The law requires that only teachers with the lektor examination shall teach in the gymnasium or middelskole. But the exceedingly high standard and long preparation for this degree has caused a scarcity of candidates, and thus teachers with only the adjunkt examination have been pressed into service to fill many vacancies in the secondary schools, especially in the lower division. Should the present scarcity of legally qualified teachers continue, the adjunkt examination, carrying with it an increase of salary, may become general for the middelskole teachers.³⁸ As it is now, an adjunct's salary hardly

³⁷ Representatives of the 8 groups are university trained men with the exception of the army officers. They are trained at the Military Academy, which has the same entrance requirement as the university.

³⁸ Since this was written a change has taken place in the situation described above, and a sufficient number of candidates to fill all vacancies are now graduated year by year.

measures with that of an official degree for which university training or its equivalent is required, unless it may be that of a lieutenant in the regular army. There is a strong movement in the rank of secondary-school teachers for a salary revision that would make their salaries absolutely on a par with those of any group of State officials whose qualifications presume a candidate's degree. It should be stated here that there are certain special advantages enjoyed by teachers in the secondary schools of Norway not enjoyed so generally by other groups of State officials, except the ministers³⁹ in the State church, and that is in the way of modification of house rent, which, in the case of the rektor, amounts to a reduction of about one-half of normal cost. This addition does not appear in the salary scale.

Danish salary scale compared.—It is interesting to compare the Norwegian salary scale in part with that of the sister country, Denmark.⁴⁰ The Danish krone, at par, has the same value as the Norwegian krone.⁴¹

Official salaries in Denmark

	Minimum	Maximum
	<i>Kroner</i>	<i>Kroner</i>
Instructors, etc.:		
University professor.....	7,800	9,600
School inspector.....	10,500	
Rektor.....	7,800	9,000
Lektor.....	5,400	7,200
Adjunkt.....	3,480	5,640
Other teachers (middelskole).....	3,000	4,800
Military officers:		
Major general.....	11,400	
Colonel.....	9,000	
Lieutenant colonel.....	7,200	8,100
Captain.....	4,800	6,240
First lieutenant.....	2,220	3,420

THE SOCIAL STATUS OF THE NORWEGIAN TEACHER

To understand the social status of the Norwegian teacher⁴² one must understand, in part at least, the Norwegian philosophy of education. In this philosophy the teacher of both primary and secondary education is not only an employee, hired by the board of education to perform a certain work by the month or by the year, but he is also a State or communal official who, by reason of superior training, education, and experience, sustains a peculiar relationship to both community and State. In this relationship he is considered not only an expert in his line, but a wise and able man whose advice and cooperation are sought in many civic and social functions. Frequently a teacher is herredsforsøger (chairman of the county or city board of administration), or is director of a local bank or on various

³⁹ Ministers in the rural parishes have the free use of a farm.

⁴⁰ From an official report.

⁴¹ Both the Norwegian and Danish krone are now (1928) at par.

⁴² The following discussion is an adaptation in part of the writer's contribution in *School and Society* for April 11, 1925, under the caption Teachers in Norway as Members of School Boards.

committees and boards of public affairs. He may engage in partisan political activities and may even become a candidate for and be elected to a seat in the Storting. In his absence in such case a substitute serves in the school. He enjoys freedom of speech and freedom to discuss political matters and questions of popular interest without in the least endangering his position.

A teacher whose talent and personality single him out as a leader is easily promoted to better positions and elected to membership on the local school board, which is not legally constituted without at least one member who is a teacher in active service. This representation of the professional staff on the administrative board is based in Norway on two principles:

(1) Teachers have studied questions of education and the needs of the schools in a scientific way and from a professional point of view. Their counsel is needed on questions of pedagogics and on the internal operation of the schools.⁴³

(2) Teachers as a class or social order are so vitally interested in the management of the schools and of the whole system of education that they should be represented on the school boards so that their interests may be guarded at all times.

By this same philosophy it is inferred that the teachers, being entrusted with the training of the young, shall enjoy freedom of action outside of the schoolroom, and shall have such compensation and social rewards as will make them in a large measure economically independent. Otherwise their position would not correspond to their charge. It is expected that they will be endowed with social privileges, prestige, and emoluments commensurate with their great responsibilities.

Because of this social prestige and freedom of expression, the Norwegian teachers as a class have furnished a larger quota of leaders and distinguished men and women than any other class of people in Norway. Many of the prominent lawmakers served at some time as teachers in country or village schools. Many of the ministers and bishops in the State church were teachers in their younger days. Cabinet members, ministers of state, and several of the premiers of Norway have come up from the ranks of the pedagogues. The teacher is an active and important factor in the entire social and political order of the country.

A fundamental reason for the high social standing of the Norwegian teacher is his life tenure of position. He considers such tenure to be a matter of course, since he is educated and trained for a specific purpose largely at the expense of the State. Before being given a permanent appointment he must serve a probationary period, usually

⁴³ Since Norway has no professional school superintendent to act as administrative officer for, and professional advisor to, the board, this counsel must necessarily come from the teachers.

two years, in which he must prove that he is efficient, or drop out of the work entirely. When he has finished his professional training and his period of probation he becomes a permanent State or communal official with all the rights of such. He may be transferred to other schools within the jurisdiction of his school board, but his salary can not be diminished. He may seek and obtain other positions in other towns or districts and may be removed for statutory causes such as immoral conduct. When he reaches the age of 70 he must resign. He then receives a pension commensurate with his salary and position.⁴⁴

⁴⁴ The State pension system of Norway is on the mutual plan and includes all State officials and functionaries. The State administers the funds and supplies any deficiency. During the time of service each teacher pays into the pension fund not to exceed 10 per cent of his salary and receives upon retirement a yearly pension equal to about two-thirds of his salary. A widow receives pension in half the amount her husband has or would have received. Cf. Andor Hoel, *Den Høiere Skole*, Feb. 15, 1928.

For data on the subject of teacher tenure and pensions in the United States, see:

Clarke, Clarence L. *Tenure of Teachers in the Profession with Special Reference to Wisconsin*. Ann Arbor, Alumni Press, University of Michigan, 1928.

National Education Association. *Research Bulletin*, Vol. II, No. 5. *The problem of Teacher Tenure*. Washington, D. C., 1924.

National Education Association. *Research Bulletin*, Vol. VI, No. 3. *The Advance of the Teacher Retirement Movement*. Washington, D. C., 1928.

Chapter VII

Conclusion

THE HEAVY SECONDARY SCHOOL PROGRAM

From the point of view of educational theory and practice in the United States, the students in the Norwegian middelskoler and gymnasiums are much overloaded. For a secondary-school pupil to carry 12 or 13 subjects, aggregating thirty-six 45-minute recitations per week, or 6 recitations per day for 6 days in the week, and keep it up year after year for 10 months in the year, seems at least inadvisable if not entirely wrong, but the Norwegian children are doing it. Nor are the subjects playwork; all the 36 recitations except 5 or 6 require considerable preparation, and home study is necessary since there is no provision made for study at school. The short recess periods between classes must be spent out of doors for recreation.

As preparation for higher education this strenuous secondary-school program has been satisfactory in Norway. The explanation of that lies, first, in the careful selection of pupils for these academic secondary schools. Most of the children who enter the middelskole have in mind some special profession—law, medicine, or theology. Ideas of prominence are brought early in life to some types of Norwegian children. The parents, as a rule, make considerable sacrifices to send their children through the middelskole and the gymnasium, so they urge their children to prepare themselves for higher positions. The scholarships and free places provided by State, community, and private agencies stimulate attendance and good scholarship. Because of the selective process the classes in the school are quite uniform in ability and aim and can make rapid progress in the school subjects.

Second. Norway has so many other kinds of secondary schools that the middelskoler and gymnasiums can devote all their energies to the academic type of training and do that well. These academic schools are growing more and more popular and the attendance at them is increasing steadily. This coincides with the general trend in many countries of the world to give to secondary education much of the universality that was formerly applied only to primary and elementary education. The increased desire for attendance at the middelskoler and gymnasiums in Norway will not raise the scholastic standard, because of constant recruitment from presumably lower intellectual levels, but it will tend generally toward a higher level of common culture. The comparatively few girls and women that formerly attended the secondary schools and the institutions of higher

learning probably indicates that Norway was not making the best use of considerable ability of a high order. But a decided change is now observed in that as many girls as boys, or more, are attending the middelskoler, and in the gymnasium the girls constitute more than one-third of the total attendance.

Lack of opportunity for self-expression on the part of the pupils is a serious weakness in Norwegian secondary education. The freedom of expression which high-school students in the United States enjoy in the way of social functions, play, dramatics, music, physical culture, sports, debates, interschool contests, etc., is almost absent from the middelskole and the gymnasium.

EVALUATING THE CREDENTIALS OF NORWEGIAN STUDENTS

A number of young people who have received part of their education in the schools of Norway come yearly to the United States and wish to continue their studies in this country. Placing them so that they can study to their own advantage and to the satisfaction of the institutions in which they enroll is a matter of much importance and some difficulty. It does not, however, require the working out of a fixed general rule that every student from a certain year in the system in Norway shall be placed in a certain year in any school in the United States. No one has authority to make such a regulation. Except in so far as they have voluntarily created their own standardizing agencies, high schools, colleges, and universities in the United States are to a considerable extent independent in fixing their requirements for admission and graduation. Moreover, the number of pupils that come from Norway is small enough so that the disadvantage of a general regulation can be avoided by handling each case on its individual merits.

Qualitative comparisons between the work in the middelskoler and gymnasiums of the one country and the high schools, colleges, and universities in the other, must for the present be made largely on subjective bases. To attempt to compare the group of schools as a whole in Norway with the group as a whole in the United States is to attempt a comparison between a relatively very small and fixed quantity with a large and varying quantity. For in Norway the assumption is that all middelskoler and gymnasiums are about equally effective; they are purposely held by State authority to a fixed program and variation is not encouraged in the small number of schools enrolling about 30,000 pupils. In the United States no assumption arises that all high schools, colleges, and universities are equally effective; variation is expected and encouraged as a source of strength in the 25,000 or more high schools giving instruction on the levels of grades 9 to 12, inclusive, to about 3,912,000 pupils, and in 1,128 or more colleges, junior colleges, and universities registering some

860,000 students. Group comparisons made in such conditions will necessarily be unreliable.

But from the data assembled in this study, committees of admission and registrars may get some help in regard to the amount of time the Norwegian student has been in school, the subjects in which he has been instructed, and the amount of subject matter covered in each.

The student in the middelskole spends more actual clock hours in the schoolroom attending classes and reciting during the 3-year course than the average pupil in the high school does in taking the 4-year course. (See pp. 18-19.) The student in the gymnasium in completing the 3-year course gives to the school an amount of time equal in the United States to 4.32 school years of 40 weeks each, counting the week to be 5 days and the student load 5 subjects. (See pp. 37-39.) Of course this does not necessarily mean that the Norwegian child has learned more in proportion to the greater amount of time he has been in school. He may not have learned more in the 6-day week of 6-hour days than he would have learned in a 5-day week of 5-hour days. Says Frederic S. Lee:

It is obvious that there is a limit to the working period and it is obvious too that the problem of its proper length is really a problem in human physiology. In attempting to solve the problem nothing stands out more clearly than the fact that a longer working day does not necessarily mean a larger output. And yet over and over again the mistake is made of increasing the hours of labor when greater production is desired, just as if the worker's body were a thing of unyielding iron and brass, instead of living and fatiguing tissues. * * *

Now it has been frequently and indubitably shown that shortening the period (of labor) from the upper toward the lower limit may increase not only the output per hour, but also the total output.¹

While Doctor Lee was writing of workers in industry, not of students in the schools, his statements probably apply to the latter as well as to the former. Doctor Terman, in his studies of supernormal children in California, found that: "It would appear that home study has not played a very large part in the almost universally good school records of these children." And he adds: "At a given age there is practically no correlation between educational accomplishment and the number of terms the gifted child has attended school. The causes of school success and of school failure lie deeper."²

This warning against giving the time element too much importance in determining the placement of students from Norway is necessary, first, because the general tendency in such cases is to count time service; and, second, it calls attention to a practice common in Europe of keeping children in the schoolroom more hours than is thought advisable in the United States. Careful studies of school

¹ Lee, Frederic S. *The Human Machine and Industrial Efficiency*. London, Longmans, Green & Co., 1918.

² Terman, Lewis M. *Genetic Studies of Genius*. Vol. I. Stanford University Press, 1925.

fatigue among children, like those made of industrial workers, are needed. We may then know more about the amount of time per day and year that can profitably be given to study by normal children of different ages.

But it should be kept well in mind that, heavy as this program of study in both the middelskole and gymnasium may seem, the work is actually being done and has been satisfactorily done by boys and girls for many decades. For the past 8 or 10 years the system has not worked so well. This period coincides with that of an unusual increase in the attendance which has brought in types of pupils that formerly did not seek a higher education. Many of them seem not to measure up in ability and interest to the former students. They are unable to do the work with reasonable effort, and breakdowns and failures have begun. To meet a popular demand for general higher education, the present high standards may in some way have to be lowered. However, eliminating any material part of the present curriculum is not seriously considered by any of the leaders. No scientific experiments are being conducted to determine whether this heavy curriculum, together with the steady, prolonged attendance at classes, is the most effective training that can be given to adolescent boys and girls either as preparation for later university studies or for pursuing vocations without university training.

In Chapter VI, I have called attention to the fact that the preparation of the Norwegian teacher in the middelskoler and gymnasiums is of a high order—a fact which of itself inspires confidence in the product of the schools.

The text material used is not, as a rule, so voluminous, as the corresponding material in the American schools, but it is highly standardized and thoroughly mastered. I had ample opportunity to ascertain this by reviewing the authorized texts and personally conducting tests in some 30 of the leading secondary schools of Norway.

The system of State examinations is an important factor in weighing the work of Norwegian secondary-school certificates. By referring to the sample examination questions for the middelskoler (pp. 21, 22, 24-27) and those for the gymnasiums (pp. 42, 46, 49-54) one may form an intelligent opinion of the quality of the written tests, especially when one keeps in mind the fact that neither the candidate's school nor his teachers have any part in determining the result of his examination. That is true also of his oral examinations.

Another factor by way of comparison is that the Norwegian middelskole and gymnasium extend over a period of six years. The pupils begin at the same age that the pupils in the United States enter high school. The Norwegian youth is normally 20 years of age when he finishes his gymnasium and enters the university. Students in the

United States are then ready to enter the upper division of university or college work. The university of Norway does not carry the lower division work (freshman and sophomore) offered by American universities. The corresponding type of work is done in the gymnasiums. The five colleges (fakulteter) that constitute the University of Norway³ are essentially graduate schools—each one with introductory courses prerequisite before the student enters upon his professional studies. This introductory work covers a period of about a year, and must be taken at the university.

By taking into account (1) the length of time spent in training; (2) the subjects studied and the details of the topics included in each subject; (3) the careful State supervision with its strict examinations; the preparation of the teachers; and (5) the general uniformity of academic secondary education in Norway, as all these have been presented in previous pages, college and university registrars and committees of admission in the United States should be able to work out with a fair degree of facility and accuracy the proper placement of any Norwegian student who has had his training in either the middel-skole or the gymnasium. Those who have been trained in some of the other kinds of Norwegian secondary schools are of course entitled to consideration in so far as their special courses and their attainment in them are preparatory to further study on either secondary or higher education levels.

PRESENT TENDENCY IN NORWAY'S SECONDARY EDUCATION

Pending legislation on reorganization of the whole school system has been referred to previously. A parliamentary commission, consisting of leading educators, was appointed in 1922 for the purpose of proposing to the Storting a complete system of reorganization of the school system of Norway. The commission was given practically a free hand in handling this momentous task, except that it was stipulated that secondary education must be founded on a completed common school. This latter principle should be considered determined regardless of any other changes proposed. The commission was at work about five years and prepared two elaborate reports: One for primary education, which was published in 1926; and the other for secondary education, which was completed and published during the latter part of 1927.

In view of the great labor and expertness devoted to this report and of the likelihood that the Storting will enact it into law, in whole or in part, it would seem of sufficient importance to explain its main provisions here.

³ Cf. Ch. VI, p. 77.

The measure makes provision for two types of secondary organization: One based on no English training in the public schools, and the other based on some English training previous to the beginning of secondary education. The scheme is represented as follows:

- A. (1) A 3-year real school (coeducational), and
- (2) A 4-year real school for girls.
- (3) A 5-year gymnasium (coeducational).
- B. (1) A 3-year real school.
- (2) A 5-year gymnasium.
- (3) A 4-year higher school for girls.

No provision is made for a separate gymnasium for girls in the new plan, but the 3-year real school may be either separate or coeducational. Distinction is made between college or university preparation and general training in the secondary schools. The gymnasium will still be the training school for the university, and, that it may not interfere with a middle-school training, it provides for five years instead of the present 3-year system, and it will admit pupils directly from the completed common school, thus saving one year in preparing for the university. The 3-year real school in either A or B is to be along far more practical lines than the middle school, and it will serve as preparation for a greater variety of life interests, and yet not be vocational but cultural in character. The girls' type of secondary school is to be four years in length and the coeducational type three years. The reasons for the 4-year type for girls are, first, that the amount of academic work necessary to be included is too strenuous for girls, and, second, there is not enough time left for domestic art and other necessary woman training. The first two years of the real school are intended to be practically the same in content as the corresponding two years of the 5-year gymnasium, and thus pupils could easily pass from the real school to the gymnasium at the beginning of its third year on equal standing with those who have been two years in attendance.

While the plan has much to commend itself, it is meeting with violent opposition from some of the leading men of the teaching fraternity. Its fate can only be conjectured as the causes for the difference of opinion are very deep-rooted in the social fabric of the nation.

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